MARCH 25, 1954
Two Dollars

THE Lumberman

THE PRODUCTION JOURNAL OF THE FOREST INDUSTRIES

43rd Annual

REVIEW NUMBER

The Statistical and Reference Issue

1954

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A Miller Freeman Publication

McCulloch "*Sabertooth*" Saw Chain

NOW... from a brand new, McCulloch owned factory devoted exclusively to the production of saw chains, comes a complete line for <u>every</u> popular make of power saw. This guarantees the rigid quality control only possible under one roof—only possible at McCulloch.

CUTTER TEETH. High carbon, *Aus-Tempered* saw steel with hollow ground cutting face... clean, fast cutting and easy to file.

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All new "Sabertooth" is the fast-cutting, long-wearing saw chain you need for heavy production logging... made by the *World's largest builder of power chain saws*. Ask your chain saw dealer about it today, or write for further information. McCulloch Motors Corporation, Los Angeles 45, California. *Export Dept.*: 301 Clay Street, San Francisco 11, Calif., U.S.A. *Canadian Distributor*: 220 W. First Avenue, Vancouver, B. C.; 525 First Avenue, Quebec, P. Q.; 861 Lansdowne Street, Peterboro, Ontario.

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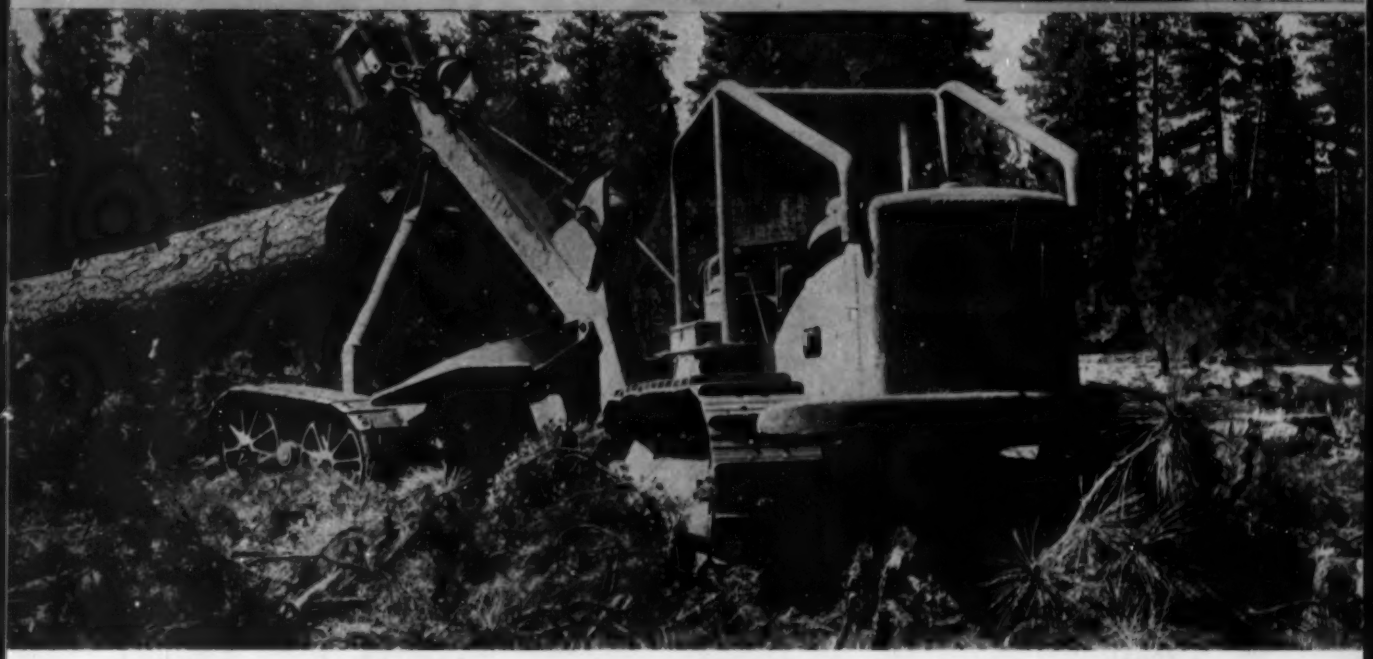
NATIONWIDE SALES AND SERVICE

"We feel CAT* rigs are more rugged ...stand up better!"

Charles Pitschner, Woods Foreman,
White Pine Lumber Co., Lakeview, Oregon



The White Pine Lumber Co. has used Caterpillar rigs since 1944. On this selective logging show on forest service land in Green Valley, Oregon, it put four big yellow tractors – this D7 with Hyster Arch and D7N Winch, and three D8s. It also had a D8800 Engine in a loader.

How was production? Here are some figures: On hauls up to ¼ mile, the D7 averaged 3 trips an hour with 3000 to 4000 bd. ft. of ponderosa pine a load. Together with two D8s, the D7 skidded about 200,000 bd. ft. a 10-hour day. Ground conditions, incidentally, were very dusty. The third D8 built roads.

"We feel Cat rigs are more rugged – stand up better," says Woods Foreman Charles Pitschner. "We can put almost anybody on them to drive and don't have to worry. Our D7 is really a sweet handling baby."

He's got something there. Cat machines are tough – and easy to handle. Both the D7 and D8 have "finger-tip" steering, which gives the operator complete control of each track for full, smooth power on sharp turns. And visibility is excellent for maneuvering – a time- and tree-saver in tight spots. No wonder operators like them, get more work out of them!

For full facts about their performance, see your Caterpillar Dealer. He backs them up with prompt, on-the-spot service – whenever and wherever you need it. Ask him to show you how they can *outwork* any competitive equipment. He'll be glad to demonstrate on your job!

Caterpillar Tractor Co., San Leandro, Calif.; Peoria, Ill., U.S.A.

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try it at our expense!

Signode wants the opportunity to prove to you that its log-bundling method can cut your log handling and storing costs!

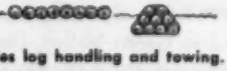
We're so sure that you'll adopt Signode's method that we are willing to put on a demonstration of our method at your operation *without obligation.*

Here is what we will do: Our fieldman will strap a truck or carload of logs at the point you select. He will show your men how to bundle logs correctly, using the Signode system and demonstrate the many advantages of Signode bundled logs.

All you need to do is *ask* to have our fieldman call! Write to any of the Signode branch offices listed below for a free demonstration date—*but do it now.*

11 REASONS WHY YOU'LL LIKE SIGNODE'S LOG-BUNDLING METHOD

- Triples millpond capacity—assures logs for operation during down time in the woods. (Cross section view shows how Signode log-bundling method can triple pond capacity)



- Simplifies log handling and towing.
- All species of logs can be bundled by this method.
- Bundling method eliminates hazards and costs of cold decking.
- Bundling logs reduces unloading time — speeds turnaround.
- Ends loss of sinker logs—by including them with floaters.
- Permits shipping more logs per tow—which means lower towing costs.
- You save on dumping and rafting charges.
- Towed bundles earn sizable insurance rate discounts.
- Minimizes possibility of injury to man removing binders.
- Simplifies log recovery in the event of break-up of raft or tow.

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The Production Journal of the Forest Products Industries Since 1889

THE Lumberman

MARCH 25, 1954
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Presenting THE NEW
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ROYAL PERFORMANCE WITH KING SIZE LOADS... FOR ALL INDUSTRY

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Logger tires can be recapped twice, hauling company reports

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The job is a tire killer. Yet this company gets longer tire service and saves money by using B. F. Goodrich tires nearly 100%, reports the tires can be recapped twice! Such a record is not unusual for B. F. Goodrich tires, thanks to the patented nylon shock shield.

Layers of strong nylon cords under the tread stretch together to absorb and distribute road shocks and bruises. This BFG nylon shock shield protects the tire body from impact, gives you this 4-way saving: (1) more original hours of service, (2) more recappable tires and more hours of service per recap, (3) increased bruise resistance, (4) less danger of tread separation. You pay nothing extra for this exclusive B. F. Goodrich feature.

No wonder many of Brix's tires have seen 3,000 hours of service and are still running. See your B. F. Goodrich retailer today. His address is listed under Tires in the Yellow Pages of your phone book. Or mail the coupon below.

ROCK LOGGER TIRE CLEATS are pointed out to Brix driver, Vic Maiello. Tread is non-directional. You need fewer spares.

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Department TO-377, Akron 18, Ohio

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do more work per *day* . . . more work per *dollar* on every type of hauling or delivery job!

Time and money are the two most important factors in any trucking job—and the new Chevrolet trucks for '54 are built to save more of *both!*

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THEY SAVE YOU MONEY IN *EVERY* WAY

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See your Chevrolet dealer for all the facts about the "savingest" Chevrolet Advance-Design trucks ever built! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

MOST TRUSTWORTHY TRUCKS ON ANY JOB! CHEVROLET

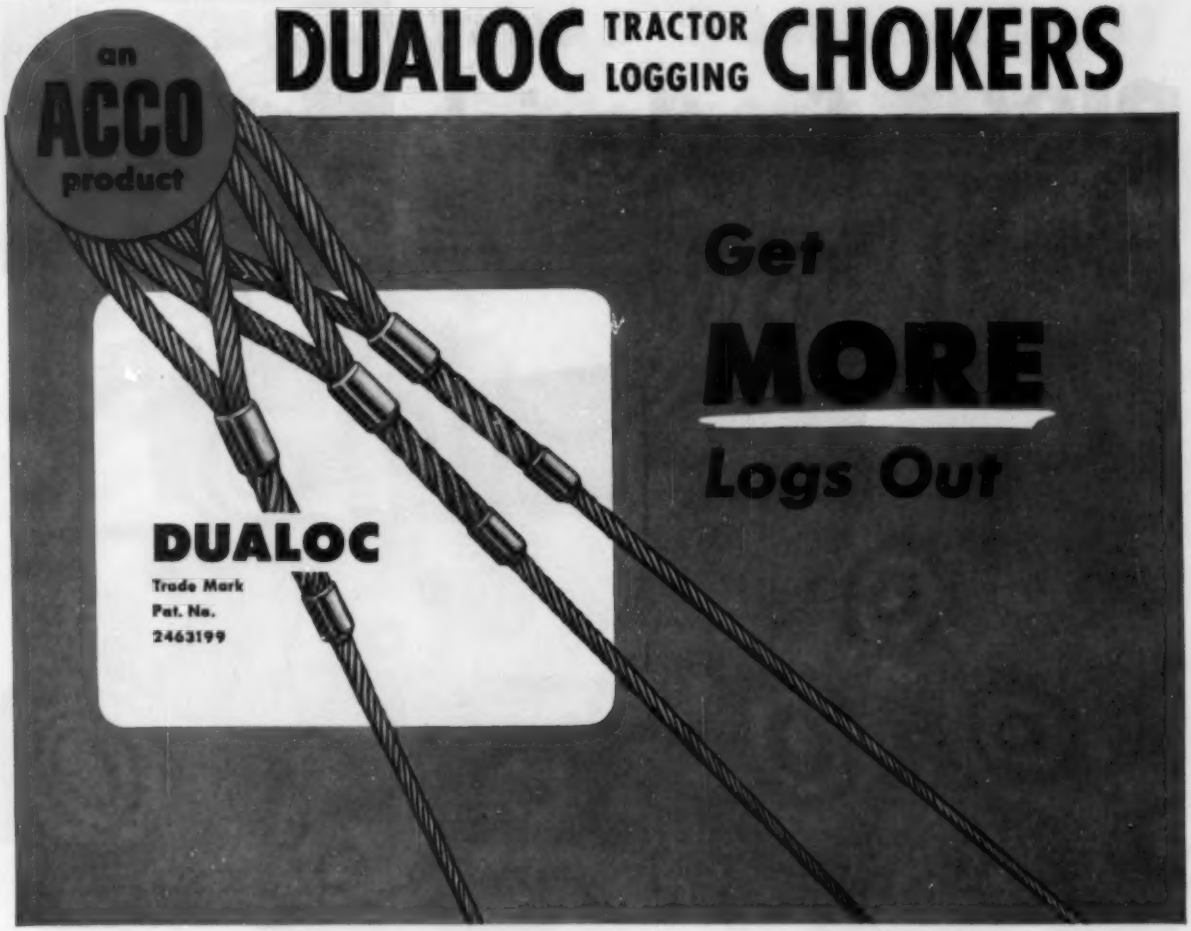
CHEVROLET ADVANCE-DESIGN TRUCK FEATURES

THREE GREAT ENGINES—The new "Jobmaster 261" engine* for extra heavy hauling. The "Thriftmaster 235" or "Loadmaster 235" for light-, medium- and heavy-duty hauling. **NEW TRUCK HYDRA-MATIC TRANSMISSION***—offered on ½-, ¾- and 1-ton models. Heavy-Duty **SYNCHRO-MESH TRANSMISSION**—for fast, smooth shifting. **DIAPHRAGM SPRING CLUTCH**—improved-action engagement. **HYPOID REAR AXLE**—for longer life on all models. **TORQUE-ACTION BRAKES**—on all wheels on light- and medium-duty models. **TWIN-ACTION REAR WHEEL BRAKES**—on heavy-duty models. **DUAL-SHOE PARKING BRAKE**—greater holding ability on heavy-duty models. **NEW RIDE CONTROL SEAT***—eliminates backrubbing. **NEW, LARGER UNIT-DESIGNED PICKUP AND PLATFORM STAKE BODIES**—give increased load space. **COMFORTMASTER CAB**—offers greater comfort, convenience and safety. **PANORAMIC WINDSHIELD**—for increased driver vision. **WIDE-BASE WHEELS**—for increased tire mileage. **BALL-GEAR STEERING**—easier, safer handling. **ADVANCE-DESIGN STYLING**—rugged, handsome appearance.

**Optional at extra cost. Ride Control Seat is available on all cab models, "Jobmaster 261" engine on 2-ton models, truck Hydra-Matic transmission on ½-, ¾- and 1-ton models.*

DUALOC TRACTOR LOGGING CHOKERS

an ACCO product



"Since we switched to DUALOC Chokers setting takes only half the time"

"Two years ago we tried our first DUALOC Logging Choker. Right from the start it proved popular with the setters because it didn't have any jagged wires sticking out to cut a fellow or snag something. Then we noticed that they didn't kink so much and the eyes didn't pull tight shut like they did on our hand-spliced chokers. But what we like best is that we can use them longer so they don't cost so much."

What DUALOC Means

DUALOC means dual locks—two steel collars are securely swaged around the ending to give you double security. They won't distort the wire rope and they provide full catalog breaking strength of the rope. But that's not all DUALOC means.

Made from TRU-LAY Preformed

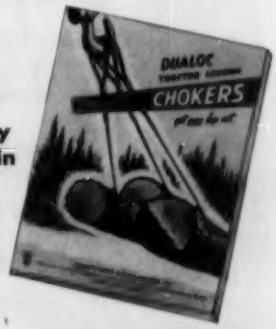
DUALOC Chokers are made from TRU-LAY Preformed Wire Rope with independent wire rope core. They have the greatest breaking strengths of any chokers made. Being preformed, they don't snarl or kink easily. This means they are easier to handle and faster to set for longer periods. The loops, or eyes, have less tendency to pull down so they are easier to flip over the arch line hook.

Full Flexibility

Another advantage of DUALOC Chokers is their built-in flexibility from end to end. They are not stiff and awkward to handle. Even the ending is flexible, and with the wire ends completely covered by the steel collar, they are safer for the setter to handle.

You just can't buy better chokers, or chokers that are cheaper to use. So see your logging distributor today or write our Wilkes-Barre, Pa., office for information.

WRITE for your free copy of bulletin DH-259



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plus TRU-LAY Preformed Wire Rope

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U. S. Plywood Corporation provides prompt delivery service in San Francisco with this new White 3000.

WHITE 3000

White motor trucks also are machine tools of modern industry—engineered to do *your* transportation job *right.* You can save with White, whether you operate one unit or a fleet. Your local White Representative has the facts. Plan to call him today.

Here is why the White 3000 is Right for deliveries

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Better Visibility...Safety

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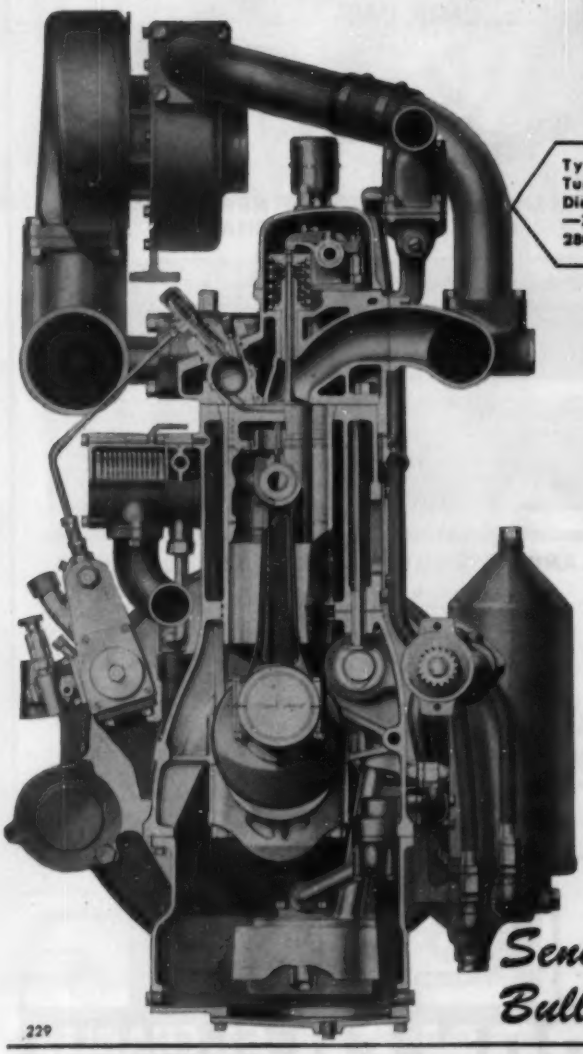
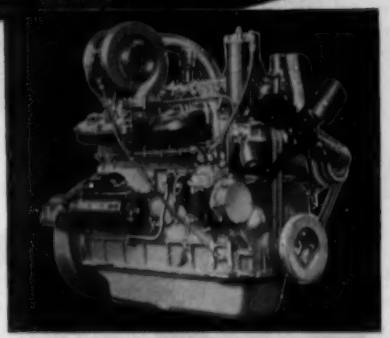
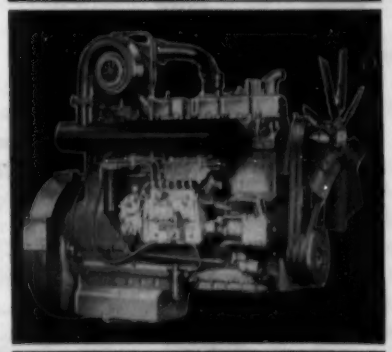


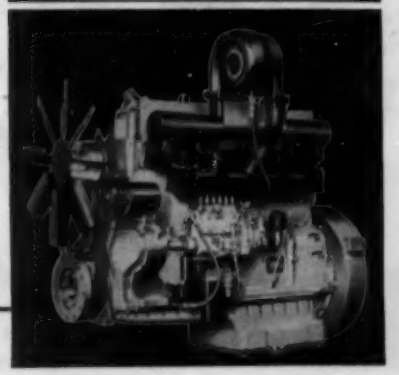
Typical Waukesha Turbocharged Truck Diesel Model 148-DKBS —779 cu. in. Max. hp 280 at 2100 rpm



135-DKBS
—4¼ x 5,
426 displ.,
185 hp



148-DKBS
—5¼ x 6,
779 displ.,
280 hp



WAKDS
—6⅛ x 6½,
1197 displ.,
352 hp

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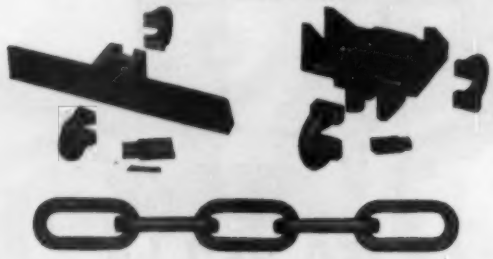
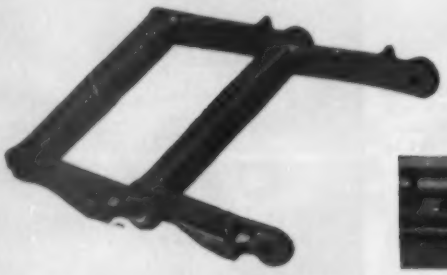
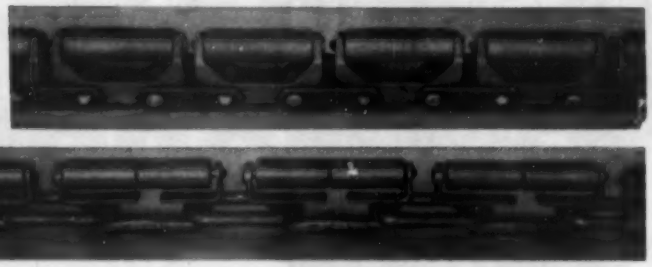


LOG HAUL

REFUSE CHAINS



MODERN LUMBER SORTING (NEW AND OLD) ROLL TOP SORTING CHAINS



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Top Photo: A 100 hp Adams maintaining logging roads for a lumber company in Montana.

Lower Photo: This 100 hp Adams is building roads through rough mountain country for a lumber company in Oregon . . . Like many loggers, this company utilizes powerful Adams Motor Graders as pushers. Picture shows this firm's idea of a pusher, mounted on front of grader.

Building and maintaining haul roads anyplace in logging country is tough work—and you'll find Adams Motor Graders have plenty of what it takes to carve new roads out of sheer wilderness—*fast, at low cost!*

From massive frames and axles to mighty diesel engines, these machines are engineered with big reserves of power, strength and stamina—handle roughest, toughest jobs with sure-footed speed, ease and economy.

Of special interest to loggers is the new Adams constant-mesh transmission—the strongest and finest ever put into a motor grader. Regularly provides 8 overlapping forward speeds (from a low of 2 mph to 26 mph for transport) and 4 reverse speeds (from 1.9 to 13.7 mph). Where extra-low speeds are desired, optional creeper gears provide 3 additional low forward speeds (¼ to 1¾ mph)—giving you 11 forward speeds in all.

Let your local dealer demonstrate how Adams Motor Graders can speed operations and cut costs—*for you!*

J. D. ADAMS MANUFACTURING CO. • INDIANAPOLIS, IND.

☆ADAMS
MOTOR GRADERS

HALF A CENTURY OF "KNOW HOW"

Atop the massive main entrance pictured here, is our trade character the H-E man, symbol of the Holmes Eureka way of doing business.

This scene in Eureka is on Highway 101. The daily movement of outbound trucks through our gateway is a lively activity. They are loaded with the finest lumber that modern methods can produce.

The source of this top quality lumber—H-E Redwood—is a vast forest of commercial timber. Harvesting is controlled and handled like a crop, on a sound conservation plan, assuring a permanent supply for future generations.

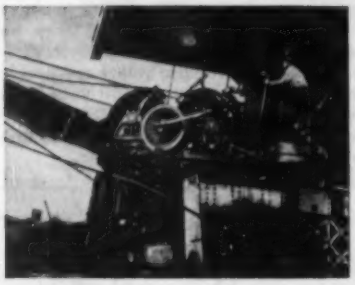
Welcome to Eureka, where we swing the gates wide open and gladly guide you through the mill.

HOLMES EUREKA LUMBER COMPANY

MILLS AT EUREKA • SALES OFFICES ARCHITECTS BUILDING, LOS ANGELES • 405 MONTGOMERY STREET, SAN FRANCISCO

The 1⅜" Tiger Brand mainlines on this reload rig outperform every other wire rope tried by the Snow Peak Logging Co., Scio, Oregon. The company has a 60-acre reload pond, loads approx. 1,600,000 board feet per week.

Snow Peak Logging Co. gets extra life from Tiger Brand!



Old steam skidder, used by the Snow Peak Logging Co., is shown here. Rig loads around 8,000 bd. ft. on a railroad car, runs better than 40 cars a day.

R. O. Britton, foreman of the pond, says, "Tiger Brand Wire Rope gives us much better service than any other rope we've used on this reload rig."

To cut costs on your logging operation, rely on tough American Tiger Brand, the wire rope that is rigidly controlled by United States Steel from raw ore to finished product. For further information or field service contact your local distributor, or write to Columbia-Geneva Steel Division, United States Steel Corporation, 1403 Russ Building, San Francisco 6.

USS TIGER BRAND Wire Rope

United States Steel Corporation · Columbia-Geneva Steel Division

UNITED STATES STEEL

Make Your Own Hose Lines

AEROQUIP HOSE AND FITTINGS ARE MATCHED FOR GUARANTEED PERFORMANCE

● No skill or special training is required to assemble Aeroquip Flexible Hose Lines by hand *in a matter of minutes!* YOU CUT COSTS because Aeroquip fittings are detachable and may be used again and again. YOU REDUCE INVENTORY because with Aeroquip bulk hose and a few fittings you can fill practically all your hose line requirements. YOU REDUCE DOWNTIME because with Aeroquip on hand, quick hose line replacements are available at all times.

Cut hose to length with hacksaw; screw into socket.

Oil nipple and inside of hose liberally.

Screw nipple into socket and hose.

Install fitting on other end; hose line is ready for use.

Aeroquip

REG. TRADE MARK

AERO-COUPLING CORPORATION

(A Subsidiary Of Aeroquip Corporation)

3015 Winona Avenue, Burbank, Calif.

SALES OFFICE and WAREHOUSE for OREGON, WASHINGTON and IDAHO: SPARKS-WILLS, INC., 1624 S. E. GRAND AVE., PORTLAND 14, ORE.

Log

...harder
...faster
...safer

with GUNITE BRAKE DRUMS ON YOUR LOGGING RIGS

Gunite Mountain Type Brake Drums have outperformed all others under the violent temperature changes caused by severe braking and water cooling. Gunite-Metal adds life, combats heat-checking. Gunite design counteracts flexing and fading.

To save money, reduce maintenance costs and minimize "down-time" use heavy-duty Gunite Mountain-Type Brake Drums. These big, rugged Gunite Drums assure safe stops down-grade with peak loads.

see your Gunite distributor

"For Safety... insist on Gunite drums!"

GUNITE

GUNITE FOUNDRIES CORPORATION · Rockford, Illinois

A mechanical dipping vat, as shown here, is the usual method of applying Permatox 10-S. Lumber can also be sprayed or dipped in bulk. At small mills dipping can be done by hand. Consult us for specific recommendations.

■ PERMATOX 10-S was developed by Chapman Chemical Company for controlling stain, mold and decay in lumber during air seasoning. Treatment costs only a few cents per thousand. Dipping equipment is inexpensive and easy to build . . . and very little labor is required in treating. PERMATOX 10-S is equally effective on softwoods and hardwoods.

Large mills, concentration yards and small mills throughout the United States and Canada have used this effective treatment for years. Users say their bright lumber, treated with PERMATOX 10-S, brings higher prices . . . eliminates complaints due to stain and mold.

In addition to preventing sap stain, mold and decay, PERMATOX 10-S mixed with Chapman AMBROCIDE protects lumber against the attack of ambrosia beetles and other insects.

Write for literature—New Bulletin 51-S contains many helpful suggestions on preventing stain, mold and insect attack in lumber and logs.

CHAPMAN CHEMICAL COMPANY
Terminal Sales Bldg., Portland 5, Oregon
DERMON BUILDING, MEMPHIS 3, TENN.

CHAPMAN™

PERMATOX® 10-S

Prevents both sap stain and mold
in freshly cut hardwoods and softwoods

36 MILLS SERVING BUILDERS OF THE WORLD

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ALBERTA LUMBER CO., LTD.
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SEABOARD LUMBER SALES COMPANY LIMITED

SEABOARD HOUSE • VANCOUVER CANADA

Sure-footed "OC-18"

PAYS BIG DIVIDENDS

Skidding logs for over a mile down to the river, this Oliver "OC-18" passes over some mighty rugged territory. There's close maneuvering along the route, but the safe, sure-footed traction that comes only with Differential Steering, does the job easily.

The "OC-18" operates with two-track power, even on turns. It holds to sidehills and makes knee-deep mud pay like solid ground. It's traction like this that keeps you in the woods longer . . . Logging more profits season after season.

And because of Differential Steering, the "OC-18" gives you these extra features—highest clearance (16 7/16")—fewer parts, low-cost, simple maintenance—less dead weight, more power on the pull—and no cross steering, ever! The "OC-18" also gives you easy handling qualities like you've never seen, and a full diesel engine with 133 drawbar h.p. Your Oliver Industrial Distributor is the man to contact for a demonstration.

THE OLIVER CORPORATION

400 West Madison Street, Chicago 6, Illinois

a complete line of industrial wheel and crawler tractors

more logs faster!

On the heavy timber hauls, it takes *power at the wheel.* For here's where loads are *tremendous* . . . where grades are *steep.*

And to *deliver* high torque — with the *right gear ratios* and *short, easy* shifts — leading loggers are *specifying* Fuller Transmissions.

80-TON PAYLOADS are hauled by this International Model W-3042-L, owned by a leading West Coast logger. Fuller Transmissions — with shorter, faster shifting and gears designed to eliminate stress concentration — provide more work time, less downtime.

110 Models

50 hp to 400 hp

FULLER 4-FS-1440 (for use with torque converters)

FULLER 10-B-1120

For any type on- or off-highway truck with engines from 330 to 1440 cu. in.— Fuller's complete line offers a transmission with the right ratios to meet the most exacting job requirements.

Fuller TRANSMISSIONS ®

FULLER MANUFACTURING COMPANY (Transmission Division), KALAMAZOO, MICHIGAN

Unit Drop Forge Division, Milwaukee 1, Wis. • Western District Branch (Sales & Service—Both Divisions), 641 E. 10th St., Oakland 6, Cal. • Shuler Axle Co., Louisville, Ky. (Subsidiary)

This is Diamond T 300 h.p. Model 950RS—one of a fleet of 18 operated by the Oakridge Trucking Company on the Pope & Talbot show at Oakridge, Oregon.

THREE basic reasons. First, the extra factor of safety. Model for model, Diamond T logging trucks are more ruggedly built, and with more protective features than others consider necessary.

Two—the wide range of models and options provides exactly the right vehicle to do the job. Six-wheel logging trucks with a choice of gas-powered or diesel engines and sizes to 300 h.p.—choice of Timken or Eaton tandems—Spicer and Fuller transmissions. The right truck often costs less to buy—*always* costs less to own!

Three—Diamond T engineering combines tested units into a balanced and modern design. Even the old "war-horses" we built for the army ten years ago are giving a good account of themselves in the woods. The Diamond T of today is the perfected product of 50 years of building quality motor vehicles.

See or call your Diamond T dealer. He has logging trucks that will handle your haul with lower costs than anything in your fleet.

See Your Dealer

Diamond T Trucks Are Sold and Serviced in All Leading Cities, including the following:

OREGON

Portland: Automotive Equipment Co., 311 N.E. Oregon St. Phone: EAst 4158

WASHINGTON

Seattle: Northwest Truck Sales, Inc., 2922 Sixth Ave., S. Phone: Seneca 4926

Spokane: Automotive Equipment Company, N. 732 Madelia at Broadway Phone: LAkeview 1579

Tacoma: Diamond T Trucks, Inc., 2302 "A" Street Phone: BR 5144

CALIFORNIA

Fresno: Diamond T Sales & Service, 3084 Railroad Ave. Phone: 3-1126

Los Angeles: Diamond T Truck Co., 2340 E. Olympic Blvd. Phone: TRinity 5101

San Francisco: Diamond T Motor Truck Company 2225 Folsom St. Phone: ATwater 2-4884

Stockton: Al P. Labrucherie, 1747 E. Charter Way Phone 6-6776

BRITISH COLUMBIA

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DIAMOND T TRUCKS

DIAMOND T MOTOR CAR CO., CHICAGO

FOR POWER

to do the job

FOR CONTROL

to do it right

FOR PERFORMANCE

that saves you $

Oilgear Fluid Power Systems

FOR HOT PLATE PRESSES

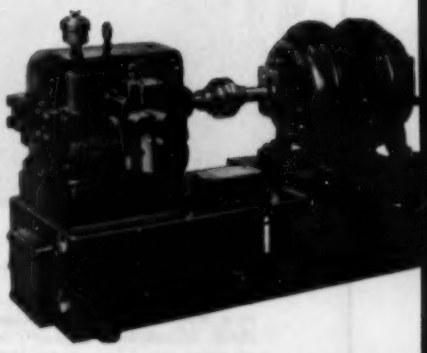
Many outstanding manufacturers of hot plate presses for the woodworking field, as well as makers of heavy duty presses in other fields, have standardized on Oilgear tried and proven "Fluid Power" pumps, cylinders and valves.

Oilgear systems on Veneer and Plywood Presses provide an adjustable working pressure to suit the work performed—a variable ram speed—automatic reduction of pump stroke and power input when pre-set pressure is reached—maximum pressure indefinitely without excessive heating or power loss. Low maintenance cost and high efficiency coupled with use of power only in proportion to the resistance of the work make their operation very economical. Simple, semi-automatic or full automatic controls are easily applied.

You get controlled, variable high speed for closing and opening press. You can vary the force to suit the material processed. You save a high percentage of power and reduce heat and wear during the curing time. Your Oilgear system will be simple, easy to install, and trouble-free. Investigate these and other operating values inherent in Oilgear pumps, cylinders, and valves. They have proven successful for over a quarter century on other tough applications.

Talk to mill men who have installed Oilgear and you will hear why they are enthusiastic about its ability to save time, money and work. Then write to our district or home office about Oilgear for

- Carriage Drives
- Gang Saw Feed Rolls
- Set Works and Holding Dogs
- Turners
- Niggers
- Barkers
- Edgers
- Haulers
- Conveyors
- Veneer Lathes
- Surfacers
- Hot Plate Presses
- Baling Presses
- Paper Machine Drives
- Calender Drives
- Winder Drives
- Unwinder Drives
- Hold-down Systems



Standard one-way variable delivery pump, type D.P. Automatic pressure unloading control, direct-connected electric motor, mounted on reservoir base.

THE OILGEAR COMPANY

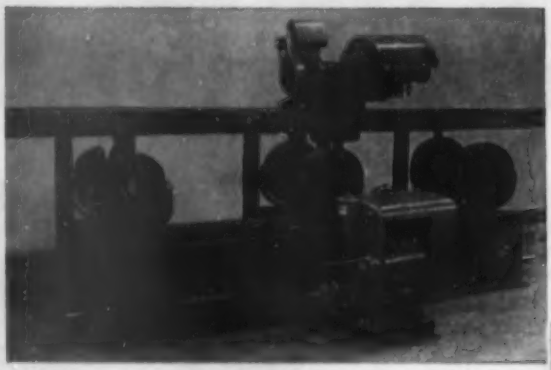
[illegible] Field engineering and service available from Coast [illegible]

Convert Your Saw Mill Waste from Ash to Cash

with SODERHAMN BARKERS and SLAB CHIPPERS

If you have a 20,000 to 35,000 board foot saw mill, you cannot afford any longer to burn your waste. Soderhamn's new D-3 Barker and modern Slab Chipper can be installed in your mill for only $25,000. These performance proved machines will pay for themselves in less than a year and make clear profits from that time on. For mills cutting more than 35,000 board feet, use Anderson Barkers and larger models of the Soderhamn Slab Chipper and Screens.

Sturdy—Dependable—Easy to Maintain



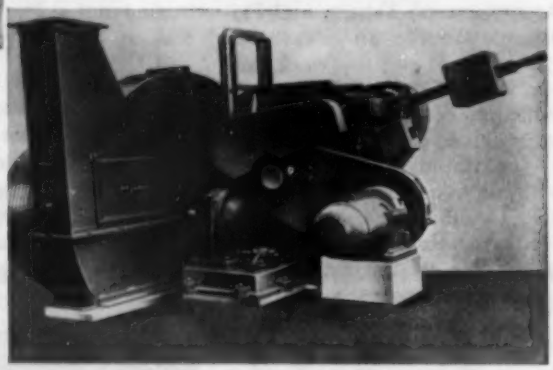
SODERHAMN HF-30 SLAB CHIPPER

Note the exclusive field proved feedwork —a must to produce uniform chips from all kinds of saw mill waste. Producing 5 cords of chips per hour at 60 H.P.

SODERHAMN D-3 BARKER
(Patent Pending)

Now Available with Cutterhead or Chain (Interchangeable)

This new, low cost barker has a maximum feed speed of 40 linear feet per minute. Handles 10-foot lengths and up. Log diameter range 5" up to 36". Gasoline or 30 H.P. electric power. The barker is part of the conveying system and therefore can be installed without any additional conveyors.



For specifications and complete information about Soderhamn wood waste recovery equipment, including Barkers, Chippers, Chip Screens, Re-Chippers, and Swedish Gang Mill equipment, wire, phone or write

SODERHAMN MACHINE MANUFACTURING CO.
SODERHAMN, SWEDEN SINCE 1864 TALLADEGA, ALABAMA

Canadian Representatives: **West Coast: Canadian Sumner Iron Works, Vancouver, B. C.; East Coast: Ferano Limited, Montreal, Can.**

You'll want this "IDEA" book

It's packed with photos of mill operations...flow charts...44 pages full of practical ideas to help you reduce costs, speed operations.

You'll find ideas you can use on conveying, power transmission, elevating, water treatment, and many other items of interest to you.

Why not send for your copy today. Just mail the coupon below.

54-112

CHAIN BELT COMPANY

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Milwaukee 1, Wis.

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Uses

VICKERS®

Hydraulics

"Super Swede" all-hydraulic portable sawmill built by Calvert Machine Service, Boring, Oregon for Soper-Wheeler Timber Co.

Equipped with Vickers Hydraulics throughout, this automatic mill needs but two men: sawyer and off-bearer.

Here is a new approach to the problem of profitable salvage in cut-over timber lands. This all-hydraulic portable sawmill produces sufficient marketable lumber from "junk" logs to much more than pay for the operation.

Vickers Hydraulics plays an important part in the economical operation of this mill. The remote control riderless carriage has infinitely variable feed speeds up to 450 fpm with smooth, fast reversal. Also operated by Vickers Hydraulics are automatic preset setworks, cant flippers, dogs, deck stop and loader, lift skids, log turner, slab bumper and slab sweep.

This is one of many ways in which Vickers Hydraulics serves the lumbering industry, their exceptional versatility and remarkable dependability assure satisfactory operation. Write for complete information.

VICKERS Incorporated

DIVISION OF THE SPERRY CORPORATION

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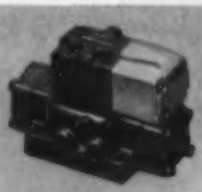
623 Eighth Ave., South • Seattle 4, Wash.

COMPLETE POWER UNITS AND WAREHOUSE STOCKS AT EL SEGUNDO AND SEATTLE

6343

VANE PUMP

RELIEF VALVE



DIRECTIONAL CONTROL VALVE

HYDRAULIC MOTOR

Representative STANDARD VICKERS UNITS USED ON CALVERT PORTABLE SAWMILL

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

Here's Big News!

FORD'S LATEST "172" CU. IN. ENGINE

★ OVERHEAD-VALVE
★ LARGE BORE
★ SHORT-STROKE
★ DEEP RIGID BLOCK

Pictured here are two types of sheet metal available with this Ford "172" 4-Cyl. Power Unit. Either type can also be specified with the Ford "134" 4-Cyl. Power Unit.

Ford
INDUSTRIAL ENGINES
AND POWER UNITS

Here is another Ford power plant of the most modern large bore, short-stroke, low-friction design . . . engineered, built and tested *exclusively* for *industrial* applications!

This new Ford engine delivers the mightiest concentration of power *per cubic inch* of any engine of comparable size and weight. With only 172 cu. in. displacement, this 4-cylinder engine attains a maximum of 58 brake horsepower at 2400 rpm. Less displacement normally requires less gas which means greater daily operating economy. Other outstanding features of this new Ford "172" Heavy Duty Industrial Engine are listed below.

Glance through them now and don't hesitate to ask or write for a detailed folder with complete specifications or any other information on the latest in engine design. *Write to:*

INDUSTRIAL ENGINE DEPARTMENT
FORD MOTOR COMPANY
15050 Woodward Avenue, Highland Park 3, Michigan

Features that Provide Highest Performance and Outstanding Economy

Large bore (3.90 in.) combined with short stroke (3.60) cuts piston travel, reduces friction, delivers more power at clutch and reduces fuel costs.

Deep-skirted crankcase is a feature that provides high structural rigidity for more efficient operation and longer life.

Precision-molded alloy iron crankshaft, fully counter-balanced in motion with mirror-like bearing surfaces that reduce friction to a minimum.

Free-turn valves (intake and exhaust) for even wear to help maintain high compression for longer than average period and reduce the possibility of valve sticking.

Weather-proofed ignition provides molded rubber integral seals for all spark plug terminals and lead wires. Distributor also tightly sealed against dust and dampness.

Full-flow oil filter with full-pressure lubrication contributes to longer engine life.

Autothermic pistons of cam-ground aluminum alloy with steel struts for controlled piston-to-sleeve clearance.

Full-length water jackets surrounding each cylinder to maintain uniform temperature, which in turn minimizes bore distortion and reduces wear.

Fast-acting, fully lubricated, variable speed governor is mounted on crankshaft as an integral part of engine.

Every Ford Industrial Engine from 134 cu. in. to 317 cu. in. is a complete, precision-built "Power Package," delivered fully equipped, tested and ready-to-run. All are available as Engine Assemblies or Complete Power Units with a wide variety of accessories and adaptations to fit your job.

powered for Performance

26' Bryant-built stock work boat, 25 H.P. Evinrude outboard motor installed in stern well.

BIG TWIN
25 O.B.C. certified B.H.P. at 4,000 R.P.M. Gearshift, separate plug-in fuel tank.

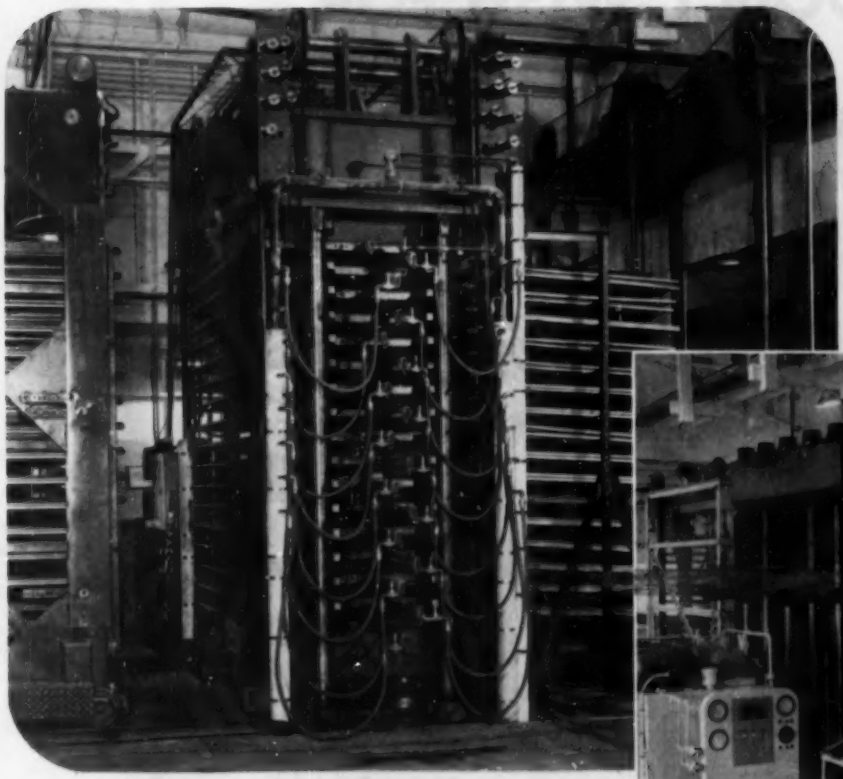
PROVED PERFORMANCE! No "maybe" when it came to picking the power plant for this husky work boat. In identical hulls the Evinrude 25 H.P. Big Twin had conclusively proved its advantages over conventional engine installations of the same rated horsepower. Higher speed, light or loaded. Greater maneuverability. Important space saving. Easy beaching. *Far lower cost*—as much as $900 *less* than the conventional installations.

With *performance,* an Evinrude gives you stamina and low upkeep you couldn't beat in any type of motor. A complete line, 3 to 25 H.P., to meet the widest range of work boat needs. See your Evinrude dealer—look for his name under "Outboard Motors" in the yellow pages of your phone book. For complete literature write EVINRUDE MOTORS, 4379 North 27th Street, Milwaukee 16, Wisconsin.

In Canada: Manufactured by Evinrude Motors, Peterborough, Ontario

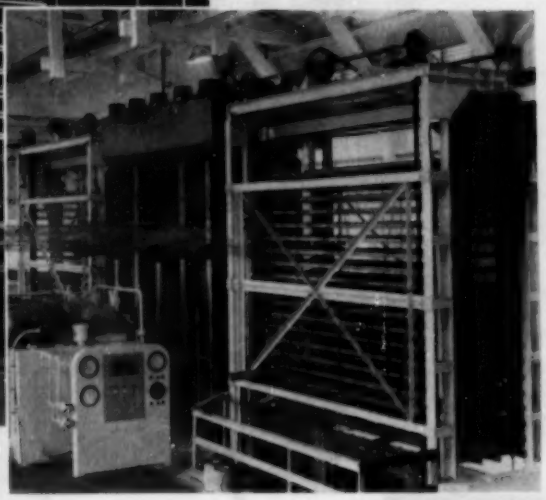
Big Twin is also available in 20" extra depth model suitable for transom heights to 35". Photo shows Bristol Bay, Alaska, salmon gillnetters converted to power with this motor.

EVINRUDE
OUTBOARD MOTORS



For HARDBOARD: Illustrated below are the Washington 5,500-ton, 54" x 202", 20 opening, 1,100 psi board press and automatic loader and unloader in the plant of the Coos Bay Lumber Co.

In this modern hardboard plant, Washington Iron Works furnished the complete line from forming machine to humidifier, including feed unit, felter, cutoff and trim saws, speed changer, vacuum transfer and board and caul transfer.



For PLYWOOD and DOORS: Above, 16-opening, 48"x96", 225-psi counter-balanced Washington plywood and door press at McCleary plant of Simpson Logging Co.

WASHINGTON HOT PLATE HYDRAULIC PRESSES

HOT PLATE PRESSES that increase production, protect quality by exact control and reduce operating and maintenance cost, are a profitable investment. Because Washington presses are engineered to deliver a competitive "edge" in all these respects, they have been the choice of an increasing number of leading plywood, door and hardboard producers.

All Washington hot plate presses are fully automatic in operation, with adjustable pressure and timing controls. Lukens labyrinth steam platens are used to provide a uniform surface temperature and faster heat-up, with utmost steam economy. The standard opening between platens is 3" or 4", with larger or smaller openings available on specification.

Counter-balanced Washington hydraulic hot presses with closely controlled low pressures are also available. Some are designed for combination use in the manufacture of both plywood and plywood flush doors of cellular construction. Others are designed solely for the specialized production of doors.

Giant hot presses for hardboard processing are another product of Washington design and manufacture. Units range up to 7,500 tons and plate dimensions of 66" x 202". Pressures and temperatures are controllable, with automatic timing of operation cycle.

In pulp mills, Washington rapid traverse pulp baling presses are setting new production and economy records. Standard models are up to 2,000-ton capacity and are completely automatic.

Loaders, unloaders and other accessory units for all types of hydraulic presses are also manufactured by Washington Iron Works.

Your inquiry invited

As the leading western manufacturer of hydraulic hot-plate plywood, door and hardboard presses, and pulp-baling presses, Washington Iron Works invites inquiries for either standard or special types of presses and accessory devices.

1500 Sixth Avenue South, Seattle 4, Washington

WASHINGTON IRON WORKS

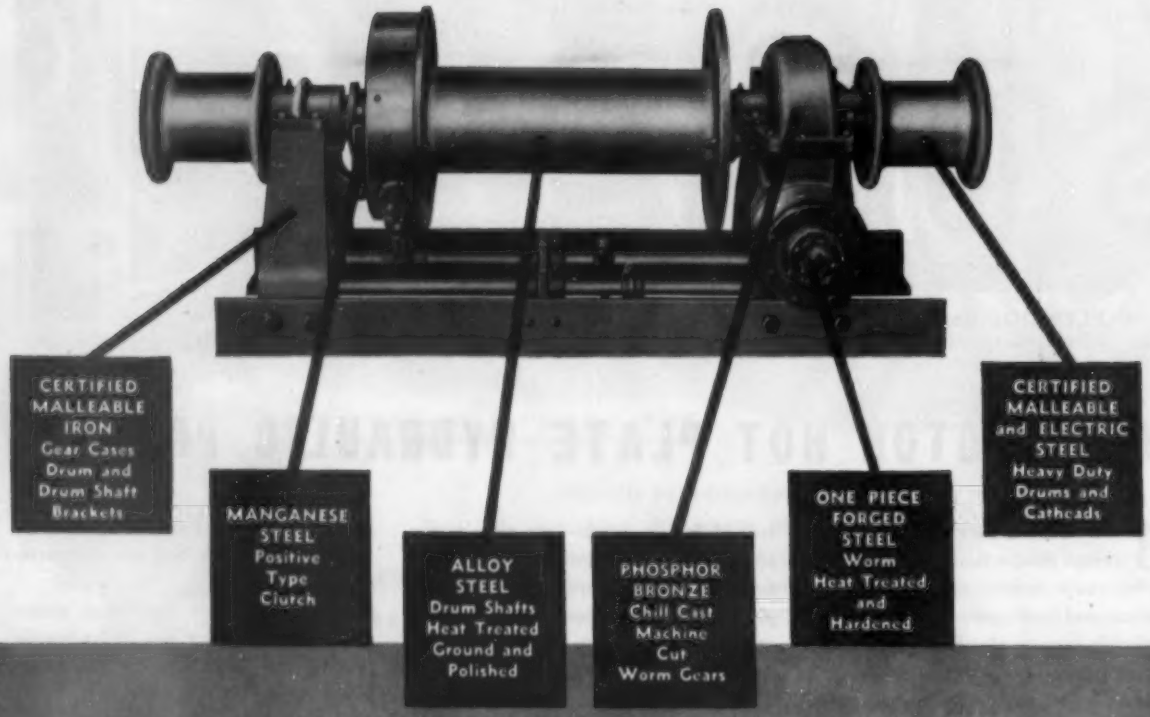
ELliott 1282

WASHINGTON IRON WORKS

DON'T WISH FOR

ADVANTAGES

WE *Already* OFFER


CERTIFIED MALLEABLE IRON Gear Cases Drum and Drum Shaft Brackets
MANGANESE STEEL Positive Type Clutch
ALLOY STEEL Drum Shafts Heat Treated Ground and Polished
PHOSPHOR BRONZE Chill Cast Machine Cut Worm Gears
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CERTIFIED MALLEABLE and ELECTRIC STEEL Heavy Duty Drums and Cathcads

Rugged in construction, yet delicate in operation, cab-operated Tulsa truck power winches are built of the finest available materials. Tulsa Winches are available in 28 models, in capacities from 6,000 to 80,000 pounds to meet every winching requirement. For power with safety, specify

*Reg. U. S. Pat. Off.

Tulsa* Winch
TULSA, OKLAHOMA — DIVISION OF VICKERS Inc.

THE WORLD'S LARGEST MANUFACTURER OF TRUCK POWER WINCHES

Versatile worker for a busy camp

PERKINS P-6 DIESEL ENGINE

EASY TO MAINTAIN
RELIABLE ECONOMICAL

Here's inexpensive power to operate logging winches, logging yarders, portable saw mills and many other pieces of equipment in your lumber camp. This power-packed, lightweight, high speed diesel, developing 85 H.P. at 2,400 R.P.M. can be counted on to give you thousands of hours of maintenance-free running.

The P-6 is ruggedly constructed . . . and economical to run. Its efficient "Aeroflow" combustion system gives you greater output for less fuel . . . and better all-round performance.

Plan now to get the versatile Perkins P-6 for your camp. Its many uses and low operating cost will save you money! Write for complete information—today!

5301

SALES AND SERVICE FACILITIES ACROSS CANADA USE ONLY GENUINE PERKINS SPARE PARTS

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THE WORLD'S MOST TRIED AND TRUSTED

AIR BRAKES

Performance Proven Over More Logging Miles Than Any Other Braking System!

It's easy to see why over the years the men who own and operate America's logging fleets have made Bendix-Westinghouse Air Brakes **first choice for this rough and rugged braking chore.** Look at it from the standpoint of your own operation. Think of the tremendous investment you and your company have tied up in a single, fully loaded logging rig in terms of driver, equipment and potential profit. Then multiply this figure by your total fleet. Chances are the result will be a figure worth thousands of dollars—perhaps even millions! And this is a sum worthy of the **finest protection available** . . . Bendix-Westinghouse—the world's most tried and trusted air brakes! You'll find, in addition to providing **utmost safety and long, dependable performance,** these mighty brakes actually pay off with savings—*big* savings on maintenance and parts replacement costs. That's because from compressor right on down to brake chambers, Bendix-Westinghouse Air Brakes are built *better* by the most experienced manufacturer in the business. So take advantage of this extra all-around performance, **proven wherever logging trucks roll**—specify Bendix-Westinghouse Air Brakes—the world's safest power-to-stop!

BENDIX-WESTINGHOUSE AIR BRAKES REG. U.S. PAT. OFF.

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE COMPANY

GENERAL OFFICES & FACTORY—ELYRIA, OHIO • BRANCHES—SYDNEY, CALIFORNIA AND OKLAHOMA CITY, OKLA.

Is there ONE chain that best meets your drive or conveyor problem?

Divided rollers of Link-Belt's roller top chain offer big advantages. First, free turning is assured because short roller sections are accurately machined. Triple rollers end the nuisance of one board dragging another off the table. And greater life is gained because of greater bearing area and many other design improvements.

You'll find the answer in LINK-BELT's complete chain line... a size and type for every job

The application shown above is an example of how you can select the *one* chain best suited for a particular need from the complete Link-Belt line. And each chain is engineered to provide more efficient service at lower cost than so-called general purpose chain.

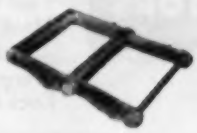
Whatever your requirements, you are assured of the *right* chain for the job when you rely on Link-Belt. And, remember—a chain bearing the Link-Belt double arrow is your guarantee of longer chain life.

For information on the complete Link-Belt chain line, see the Link-Belt representative near you. He has the answers for efficient, low-cost drive and conveying chain performance.

Typical chains from the complete LINK-BELT line

Class SS bushed roller chain with offset sidebars —for heavy drive service at moderate speeds.

Roof-top pintle chain—for transfer conveyors, each strand presenting a sturdy, moving ridge.



Class H drag chain—for drag conveyors, handling sawdust or other refuse in runways or troughs.

Class H Pintle chain—excellent for conveyors that slide, used plain or with attachments.

LINK-BELT

CHAINS AND SPROCKETS

LINK-BELT COMPANY • PACIFIC DIVISION • Plants and Factory Branch Stores at San Francisco 24, Los Angeles 33, Seattle 4. Offices and Factory Branch Stores at Portland 9, Spokane 13, Oakland 7, Salt Lake City 1. 13,181-P

New! ELECTRIC STARTING SEA-HORSE 25

Push-Button Starting

- **Electric Starting!** — ALSO EQUIPPED FOR MANUAL STARTING
- **25 Horsepower!**
- **Speeds over 30 mph!**
- **Fitted for Ship-Master Remote Control!**
- **Gear Shift!** FORWARD-NEUTRAL-REVERSE
- **Mile-Master Fuel System!** 6 GALLONS
- **Fitted for Fuel-Master Supply System!**
- **Twist-Grip Speed Control!**

Johnson
SEA-HORSE
OUTBOARD MOTORS

Talk about the "automatic outboard." This is IT! Here is everything that has made the Sea-Horse 25 sensational — PLUS JOHNSON-ENGINEERED ELECTRIC STARTING!

It spins into action at the first touch of the starter button (still equipped for manual starting, too). In fact, this great motor is engineered so that you can choke, start, shift, throttle, steer, and stop *without leaving your seat up front!* In addition to the 6-gallon Mile-Master Fuel System (standard equipment), it's fitted for Johnson's amazing new Fuel-Master Supply System, for *extra-long* cruising range — and Ship-Master Remote Control, for shift-and-throttle operation.

Nothing has ever been created to make outboard handling so simple, so convenient, so luxurious. Get the full story. See your Johnson Dealer. Look for his name under "Outboard Motors" in your classified phone book.

FREE!

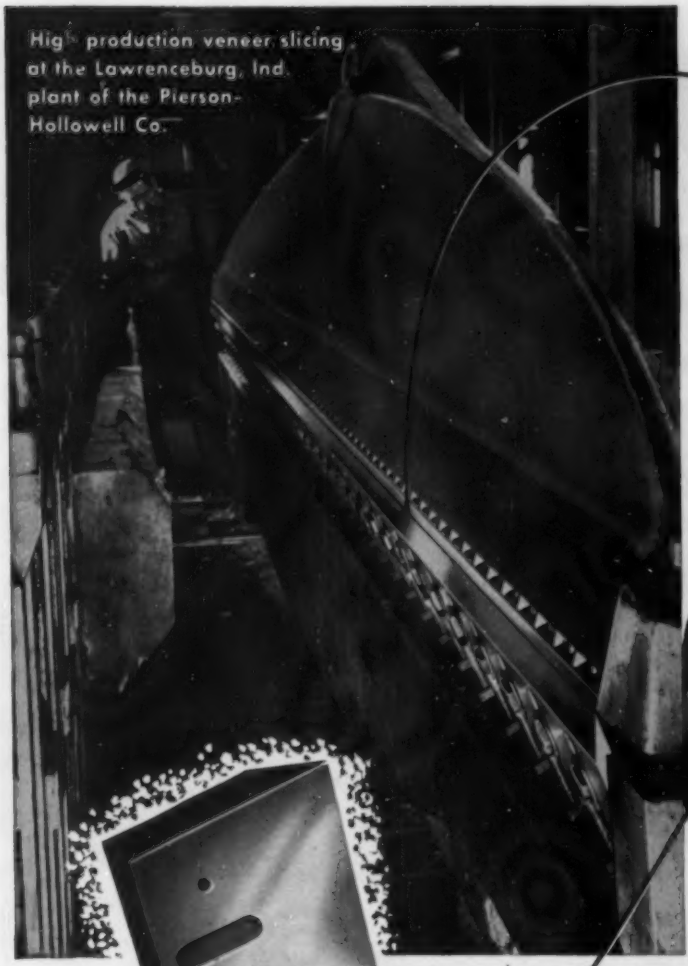
Send for colorful, fully-illustrated catalog which describes, in detail, the Electric Starting Sea-Horse 25 and the four other great Johnsons. Catalog is yours for the asking. Write to:

JOHNSON MOTORS
6400 Pershing Road, Waukegan, Illinois
In Canada: Mfd. by Johnson Motors, Peterborough

5 GREAT SEA-HORSES FOR 1954

ELECTRIC STARTING SEA-HORSE 25—25 hp. The "automatic outboard" $498.00*
SEA-HORSE 25—25 hp. Over 30 mph! Everything Deluxe $410.00*
SEA-HORSE 10—10 hp. New! Improved! Now more brilliant than ever! $297.50*
SEA-HORSE 5½—5½ hp. Revolutionary *Quiet!* Suspension Drive. All the "big-motor" features with "little-motor" weight $210.00*
SEA-HORSE 3—3 hp. "The littlest Sea-Horse." Rugged. Amazing Angle-matic Drive ... $145.00*
SHIP-MASTER REMOTE CONTROL—Shift-and-throttle. Corrosion-proof. Instant hook-up on Sea-Horse 5½, 10 and both 25's. From $29.50*

**Prices f.o.b. factory, subject to change. OBC certified brake hp at 4000 rpm.*



High production veneer slicing at the Lawrenceburg, Ind. plant of the Pierson-Hollowell Co.

it's...

OK

let'er go!

and watch OK VENEER KNIVES make the toughest jobs look easy

The country's largest mills are getting high production at a low cost with custom built OK Veneer Knives. Here's why: Down-time is virtually eliminated because OK Knives keep their keen edges longer . . . stand up under knots without nicking or breaking. Weld failures are unheard of.

OK Knives are made to your specifications. Thicknesses are held to tolerances and parallelism of ± .001. Made of finest alloy steel. OK Veneer Knives—used by more mills than any other knife made.

Manufacturers of
PLANER KNIVES—VENEER KNIVES
CHIPPER KNIVES—HOG KNIVES
DEPT. R

GO WITH OHIO GREEN

THE OHIO KNIFE CO.

CINCINNATI 25, OHIO

Mixed Car Service and (F) QUALITY

- *Weatherply* DOUGLAS FIR PLYWOOD
- *Certigrade* RED CEDAR SHINGLES
- GRID-PLY DOORS
- PACIFIC COAST LUMBER

F TRADE MARK

Here is a typical mixed car being loaded with (F) brand quality lumber products at the Fraser Mills plant of Canadian Western Lumber Company Limited. Dealers taking advantage of this mixed car service receive their lumber needs in one prompt delivery of unexcelled (F) brand quality.

MANUFACTURED BY

CANADIAN WESTERN LUMBER COMPANY LIMITED

FRASER MILLS, BRITISH COLUMBIA

"We handle 50% more lumber with this fast, easy-to-operate 7000-lb. Clark"

— WOODROW W. SMITH,
Treasurer and Purchasing Agent,
LENC-SMITH MFG. CO., CICERO, ILL.

With a consumption of 500,000 feet of lumber and plywood per month for making cabinets, office furniture, coin-operated bowling alleys and other wood products, Lenc-Smith needed a machine for fast handling and high tiering —and found an ideal answer in a Clark 7000-lb. gas-powered Utilitruc.

"That big Clark is in operation about five hours a day, every day," says Mr. Smith. "It handles 50% more material than before, stacks heavy loads up to 16 feet. We can unload a car of fir plywood in about 4½ hours—used to take four men a whole day. And we can store ten freight-carloads more lumber in the warehouse than before. It surely is one of the best buys we ever made."

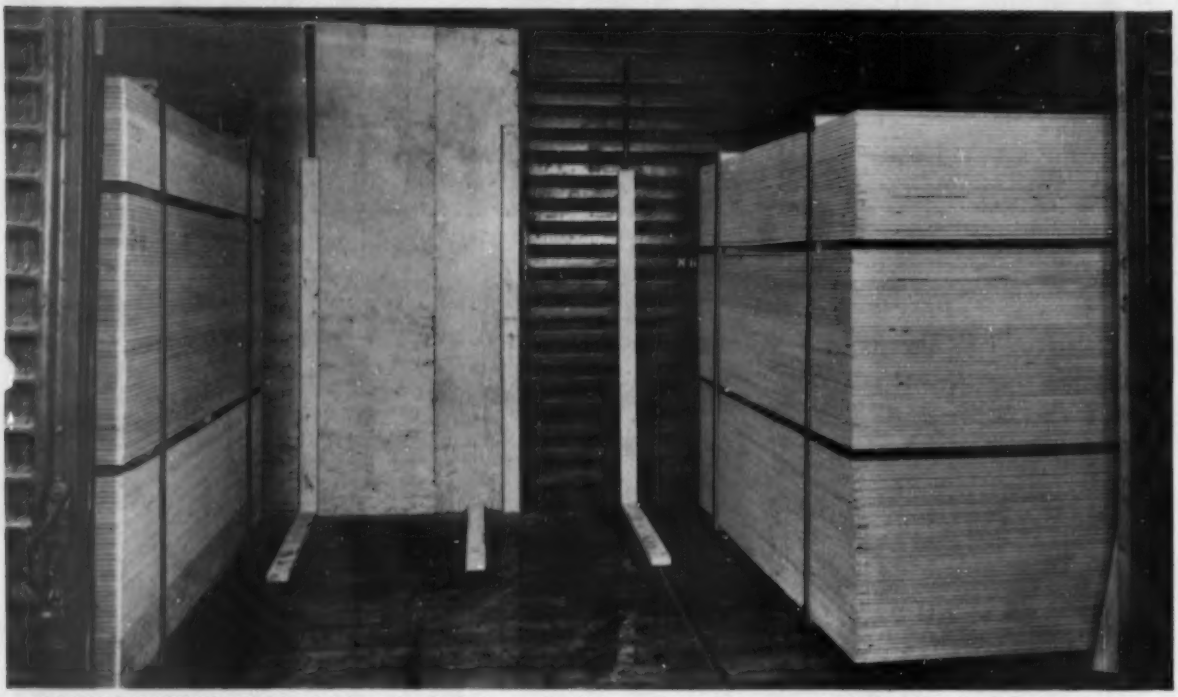
Isn't there a familiar sound to most of those jobs the Clark is doing for Lenc-Smith? Same operations you'd like to speed up in your business?—with tidy savings! There's an easy, practical step that costs nothing and may lead to big benefits: *Consult your Clark dealer.* You'll find a competent trained counselor who understands problems like yours. Listed in the directory's classified section —call him.

CLARK EQUIPMENT

Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 156, Michigan

Acme Steel Strapping Insures S.A. *(Safe Arrival)*

New carloading method pays off for U. S. Plywood



READY FOR THE LAST LOAD. This carload of plywood will be ready to ship, once the last unit is loaded aboard and secured with Acme Steel Strapping.

Out in Seattle, U. S. Plywood Corporation secures carload shipments of plywood with Acme Steel Strapping. And satisfied customers report they receive the plywood in far better condition than when rigid, bulkier bracing methods were used.

In addition to insuring S.A. (Safe Arrival) —and the satisfaction to shipper and receiver that goes with it—Acme Steel Strapping is fast and easy to apply, and it saves worthwhile time and labor, too. And often it takes the place of bulkier bracing methods, to save on materials, too.

Ask your Acme Steel representative to show you how you can apply Acme Steel Strapping to advantage in shipping *your* products. Or write Acme Steel Products Division, Dept. AA-34, Acme Steel Company, 2840 Archer Avenue, Chicago 8, Ill.

ACME STEEL

STRAP IT . . . STITCH IT . . . SHIP IT . . . SAFELY !

Picture and story courtesy Union Lumber Company, Fort Bragg, Calif.

RELIANCE TRAILER carried "Paul Bunyan" load!

The largest load of logs ever delivered via truck and trailer in California's Redwood region was brought in to the Fort Bragg mill of the Union Lumber Company last fall on a Reliance "Off Highway" Logging Trailer.

The three logs pictured contained 53,670 board feet, enough lumber to build five or six small houses—total weight, about 188 tons. The load was 21′ high, 19′ wide, and 40′ long.

Even Paul Bunyan would have staggered under this load—but it was all in the day's work for the Reliance Trailer. Throughout the lumber industry as well as in many other services on the Pacific Coast, operators have found it *pays* to standardize on Reliance!

Better Own Reliance Trailers Than Try to Compete with Them

RELIANCE TRAILER & TRUCK CO., Inc. • San Francisco

LOS ANGELES, Conestoga Equipment Co. • FRESNO, Reliance Trailer Sales Co.
SACRAMENTO, Reliance Trailer Sales • PORTLAND, Pacific Body Builders • HONOLULU, Grace Brothers, Limited

Beatin' the Beetles

Selective logging of infected spruce pays off for Russ Oliver, working 17 sections of mountain timber with four INTERNATIONAL TD-24s.

Pioneering haul roads up the rugged ranges of northwestern Idaho to log out infected trees can be a problem.

But not for logger Russ Oliver of Sandpoint, Idaho, who recently used four INTERNATIONAL TD-24s to carve 15 miles of haul roads to 17 sections of damaged spruce near the Kootenai.

The job had to be done fast, working up grade, in and out of hillside swamp and spruce bogs.

The TD-24s powered their way through this tough task with no trouble at all. Got the roads in, got the trees out before the small bugs with the big appetites had a chance to spread destruction throughout the region.

A big job . . . but not for Big Red. As Russ Oliver says:

"That TD-24 can go where other crawlers can't follow. It has the guts to get up those hills, through the swamps and spruce bogs that used to have us stopped.

"It's the best in the business for side casting with power on both tracks making skid roads. And pioneering upgrade there's nothing like it built.

"I bought two more TD-24s recently. That's what I think of them."

Wherever you work, whatever the project, you'll find an INTERNATIONAL crawler tractor and INTERNATIONAL blades or scrapers sized for the job

Check with your INTERNATIONAL Industrial Power distributor. He'll gladly arrange a demonstration date so that you can see first hand how INTERNATIONAL power can pay off for you.

INTERNATIONAL HARVESTER COMPANY
CHICAGO 1, ILLINOIS

"EASY TO OPERATE, *takes the work out of bulldozing,*" is what Glen Stradley, operator for Russ Oliver at Sandpoint, Idaho, has to say about the Big Red INTERNATIONAL TD-24. *"You're not reaching all over the deck for controls."*

For every move in Earthmoving

See INTERNATIONAL'S "Job-Phased" equipment

*Phased Equipment—Machines designed and built to handle each major phase of earthmoving most efficiently and economically.

INTERNATIONAL

INTERNATIONAL HARVESTER

POWER THAT PAYS

on an Idaho Battleground

"NOTHING STOPS THAT TD-24," says logger Russ Oliver of Sandpoint, Idaho. *"That's why I bought two more TD-24s."*

DON'T GAMBLE ON THE "WHEEL OF FORTUNE"

SPECIFY PRESCOTT-SEATTLE BAND-WHEELS. *Don't Gamble!* Be sure of getting a wheel backed by years of experience. A wheel that eliminates the element of chance. It's *"know-how"* that counts in building Bandwheels you can operate with confidence.

Year after year, Prescott-Seattle Wheels prove through continuous operation that they are "wheels of fortune."

+

Prescott-Seattle furnishes bandwheels for any make of bandmills in sizes from 6 ft. to 11 ft. in diameter.

Upper band wheels have spoke stresses normalized with tension checked by special instruments. All Prescott-Seattle wheels are ground and perfectly balanced.

+

If it's time for a replacement wheel—specify Prescott-Seattle. They cost no more in the *long run.*

+

Write or phone for your requirement.
Fast delivery is assured.

PRESCOTT IRON WORKS, INC.

No. 1 WEST LANDER STREET **SEneca 0250** **SEATTLE 4, WASHINGTON**

Builders of Quality Sawmill Equipment

TRIMMERS • EDGERS • CARRIAGES • BAND WHEELS • SET WORKS • TRANSMISSION EQUIPMENT

OREGON
Crown Machinery and Supply Co., Inc.
Portland, Oregon

IDAHO-MONTANA
Bader Machinery Company
Spokane, Washington

BRITISH COLUMBIA
Bingham Equipment Co., Ltd.
Vancouver, B. C., Canada

if you want lower V-Belt costs—

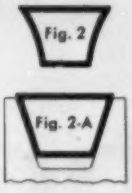
When a V-Belt bends, you can feel its sides change shape.

just make this simple test

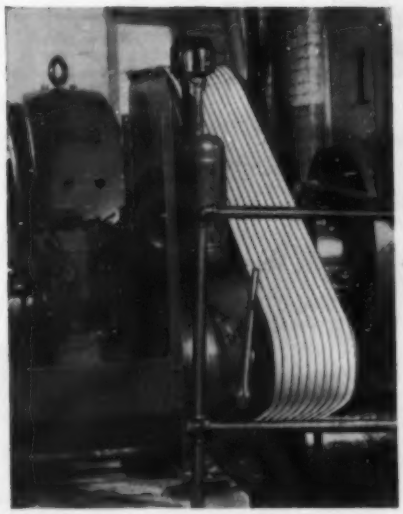
Take *any* V-belt that has *straight* sides (Fig. 1). Bend that V-belt while you grip its sides with your fingers. You will *feel* the sides *bulge out* (Fig. 1-A). Clearly, that out-bulge forces the belt to press *unevenly* against the V-pulley—and this *concentrates* wear at the points shown by arrows (Fig. 1-A).

Now bend a Gates Vulco Rope with CONCAVE SIDES (Fig. 2)

(U.S. PAT. NO. 1813698)



Instead of *bulging*, the precisely engineered CONCAVE SIDES merely *fill out* and become perfectly straight. This belt, when bent, *precisely fits* its sheave groove (Fig. 2-A). The sides of the Gates Vulco Rope press *evenly* against the V-pulley. Therefore, wear is distributed *uniformly* across the *full face* of this belt —resulting in *longer* belt life and *lower* belt *costs* for you!



Typical Gates Vulco Rope Drive —the Gates V-Belts are built with Concave Sides to insure longer belt wear.

When you buy V-belts, be sure to get the V-belt with the Concave Sides—the Gates Vulco Rope!

Gates VULCO ROPE DRIVES

REG U S PAT OFF

Gates Engineering Offices and Jobber Stocks are located in all industrial centers of the United States and Canada, and in 70 other countries throughout the world.

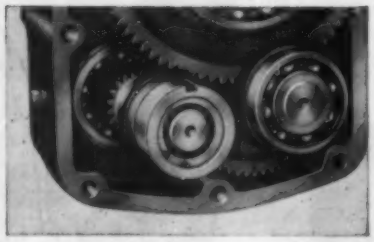
THE GATES RUBBER COMPANY
DENVER, U.S.A.

CG-849

Torque-Arm

The Most Complete Line of Shaft-Mounted Speed Reducers!

TRI-MATIC OVERLOAD RELEASE
Provides instant, positive protection for driven machines, motors and reducer itself. Automatically (1) loosens the belts, (2) cuts off power, (3) gives a warning.



TORQUE-ARM BACK STOP
Available from stock when required. Easily installed—sealed inside reducer housing. Simple, positive action prevents reversal.

Sold from distributors' stocks—in Single Reduction and Double Reduction series—with capacities from 1 to 43 hp and output speeds from 12 to 330 rpm—Dodge Torque-Arm is the new and modern idea in speed reducers.

No special engineering required. No foundation to provide. No flexible couplings. No sliding base. No lining up difficulties. No expensive installation. Stock Taper-Lock sheaves prescribed for each job to provide desired speeds. Application to other machines is practical and easy.

Unit is driven through any V-Belt Drive. Torque-Arm, fastened to any fixed object, anchors the reducer unit. Turnbuckle provides fast and accurate adjustment of belt tension.

Standardize on Torque-Arm, the speed reducer that saves you money.

DODGE MANUFACTURING CORPORATION
900 UNION STREET, MISHAWAKA, INDIANA

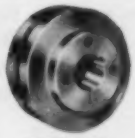
DODGE
of Mishawaka, Ind.

CALL THE TRANSMISSIONEER, your local Dodge Distributor. Factory-trained by Dodge, he can give you valuable assistance on new, cost-saving methods. Look for his name under "Power Transmission Machinery" in your classified telephone book.

ROLLING GRIP AND DIAMOND D CLUTCHES

TAPER-LOCK SHEAVES, SEALED LIFE V-BELTS

DODGE-TIMKEN PILLOW BLOCKS



TAPER-LOCK FLEXIBLE COUPLINGS

It's in!

Aim for bigger pay loads—and score every time with Kenworth. Don't dribble away your profits on high operating and maintenance costs. Get the jump on them with dependable Kenworth performance. Experience marks the favorite in trucking as in basketball—another point for Kenworth. For many years Kenworth's engineering team has been helping truck operators solve their specialized transportation problems. Take a tip from successful truckers everywhere who have learned . . .

. . . There's more WORTH in KENWORTH

KENWORTH

TRUCKS ★ BUSES

FACTORY AND HOME OFFICE: SEATTLE, U. S. A., DISTRIBUTORS IN THE UNITED STATES AND MOST FOREIGN COUNTRIES

Millions of PARTS

WITHIN ARMS' REACH!

No wasted time running down replacement parts when your truck's at Roberts Motor Company for an overhaul or a tune-up. Here in our fine new building...*within arms' reach* of our experts... is the Northwest's largest stock of truck and industrial parts... genuine replacement parts to match the precision and durability of the originals. Rely on Roberts for complete truck parts service.

A TRUCK TIP

When wiring a truck, you often find it difficult to feed the wire around corners or through congested areas. To solve this problem, use a speedometer cable as a pilot, twisting it as you force it through. Next, solder the wire to the cable and pull it through.

PHONE
FILMORE 6661

ROBERTS
MOTOR COMPANY
123 N. E. PACIFIC STREET • PORTLAND, OREGON

BELGIUM

By
JOSEPH FOUARGE
Ministry of Agriculture
Cembloux, Belgium

700,000 cubic meters of snowfallen wood for mine props and 150,000 cubic meters for sawing are or will be cut in 1953 and in 1954.

Efforts are being made to develop wood utilization. For example: a week-end wood house was shown at the Commercial fair of Namur and had a good success; a firm has begun to make long-span timber in laminated wood, glued with synthetic resin.

Timber logs, in thousands of cubic meters

Years	Production	Import	Export	Consumption
1950	1,950	2,070	220	3,800
1951	2,000	1,950	450	3,500
1952	2,100	1,775	275	3,600
1953	2,200	1,300	250	3,250

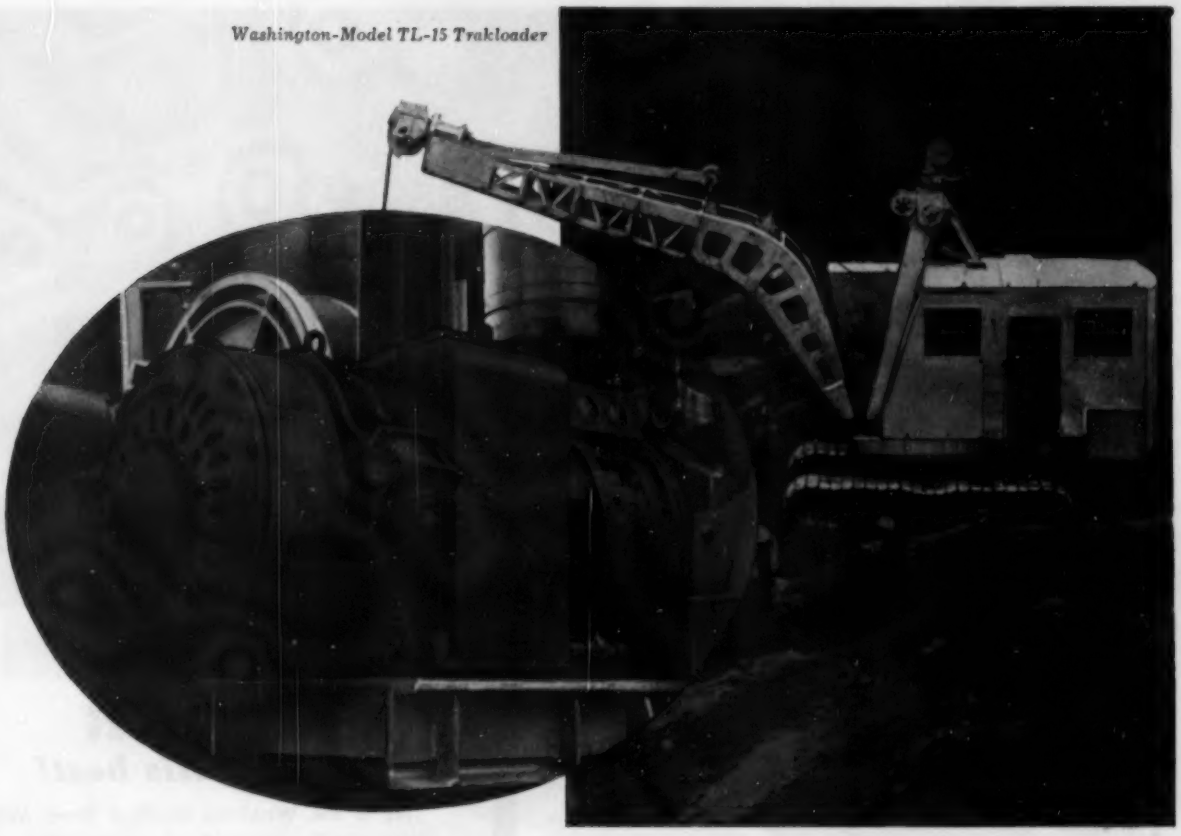
There has been a reduction in the consumption of wood, partly, because of the competition of the other materials. Also, there has been a regular increase of our national production. Consequently, imports are being reduced, especially in mine props, wood for pulp and ties.

Development of Plywood Industry Seen in India

India is developing an important plywood industry to help meet the demand for tea packaging. During periods of normal export, the tea industry of India uses from 100 to 110 million square feet of plywood a year to make approximately 5 million tea chests. The demand for plywood for other commercial purposes is estimated at 10 million square feet a year, but plywood is replacing solid wood slowly because the latter is easy to get and relatively cheap.

The Indian plywood industry consists of about 60 government-approved factories, compared with 29 in 1948, with an annual capacity of 160 million square feet of tea-chest plywood. There are also a large number of cottage plywood factories, the biggest producing center being in the state of West Bangal, although there are other large producers in Assam, Madras, Travancore-Cochin and Bombay. Peak production of tea-chest and commercial plywood was in 1951, when output reached more than 65 million square feet. Imports in the same year totalled 45 million square feet of tea-chest plywood, practically all of which came from Finland, the traditional supplier.

Washington-Model TL-15 Trakloader



WESTERN GEAR TORQ-MASTER® can do a GOOD job for YOU, too!

Just as the Western Gear Torq-Master TSD Series transmission with Torque-Converter (as illustrated) introduces flexibility and ease of control as part of the power plant in the Washington Iron Works Trakloader, so can it also be practically and economically applied to help you with your logging problems.

To find out how this equipment can help bring in more logs for you at lower cost, write, wire or phone Western Gear Works, 417 Ninth Avenue So., Seattle 4. Main 0062.

An interesting and informative brochure on the TSD-2 and TSD-4 Torq-Master transmissions for engines rating up to 550 H.P. is available upon request at no cost or obligation to you. Please ask for Bulletin 5328.

ORDER FROM YOUR GENERAL MOTORS PARTS DIVISION WAREHOUSE

5345

WESTERN GEAR WORKS

Plants: Seattle
San Francisco
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(S. F. Peninsula)
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65th year

Manufacturers of PACIFIC-WESTERN Gear Products

Pacific Gear & Tool Works

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1035 Folsom St., San Francisco 3, California
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132-134 W. Colorado St., Pasadena 1, California
117 N. Palmer St., Houston, Texas

Representatives: N. 2605 Division St., Spokane, Washington
930 S. E. Oak St., Portland 14, Oregon
Pacific-Western Products, 212 Ross Bldg., Denver 2, Colorado
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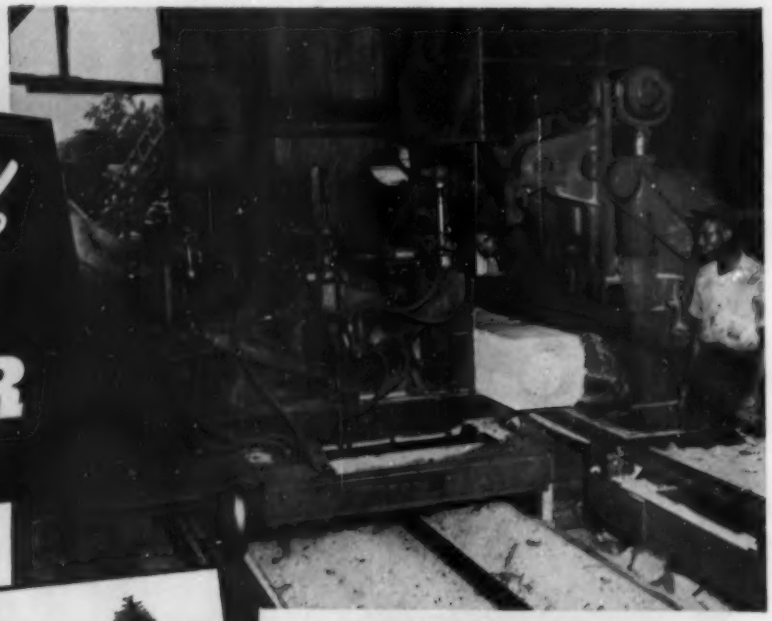
15 to 20% MORE LUMBER



SLEDGE LUMBER CORPORATION
P. O. BOX 555 — TELEPHONE 107
WHITEVILLE, NORTH CAROLINA

W. F. Sledge, President
February 11, 1953

THE WHELAND COMPANY
Chattanooga
Tennessee

Gentlemen:

During the year 1952 we completed construction of our electric driven six-foot Wheland band mill. Since you furnished the complete mill with the exception of the trimmer, we thought you might be interested in our experience with your sawmill equipment.

After more than a year of operation we find we are averaging six thousand feet per hour, with almost no maintenance. Compared with our former circular mill, we get from fifteen to twenty percent more lumber, cut more uniformly, from the same amount of logs. With twice the number of men we get three times the production, with greater ease.

We feel that the band mill is perhaps the difference between profit and loss during recessive periods, or periods when stumpage is priced excessively high. It is also the answer to a more complete utilization and greater conservation of timber.

We are highly pleased in every respect with the mill, and were we to build another we know of no change we would make.

With kindest regards, we are

Yours very truly,
SLEDGE LUMBER CORPORATION
W. F. Sledge
W. F. Sledge

UNIFORM LUMBER
always sells best!

This is the Wheland Six-foot Band Mill with Air Equipped Carriage installed at the Sledge Lumber Corporation, Whiteville, N. C. With this Wheland band mill you'll always get quality lumber.

"After more than a year of operation, we find that we are averaging six thousand feet per hour, with almost no maintenance."

Wheland has made quality machinery for over 80 years. May we have one of our trained sawmill men show you what Wheland Equipment can do in your mill?

WRITE OR PHONE TODAY!
NO COST OR OBLIGATION ON YOUR PART!

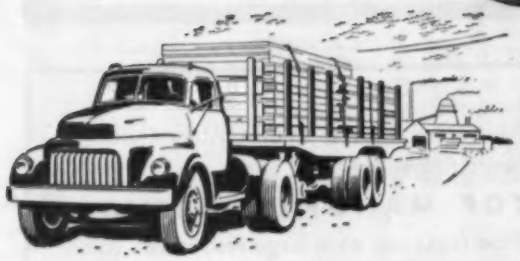
TRADE WHELAND MARK

THE WHELAND COMPANY

CHATTANOOGA 1, TENNESSEE

FOR OVER 80 YEARS THE FOREMOST NAME IN SAWMILL EQUIPMENT

Exclusive Eaton Features add up to Longer Axle Life, Rugged Dependability, Minimum Shop Time, Lower Maintenance Cost



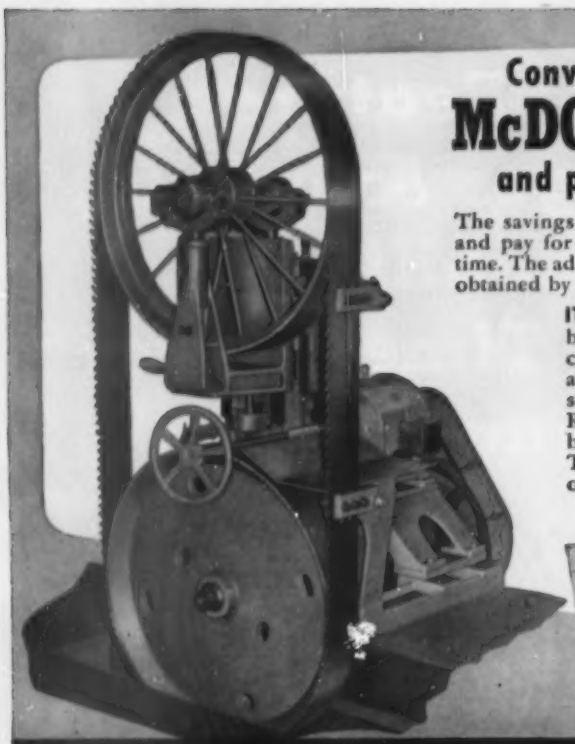
More than two million Eaton Axles in trucks today. For complete information, see your truck dealer.

Eaton's planetary gearing distributes pressure and wear over a number of small gears, resulting in lower unit stress. Forced-flow oiling system provides positive lubrication to all moving axle parts at slowest vehicle speeds. Extra heavy construction eliminates the possibility of distortion or misalignment under full loads. Practical, down-to-earth design makes maintenance quick, easy, economical. Simple shifting makes it easy for drivers to use all available gear ratios. The right ratio for every road and load condition; gives extra maneuverability, positive control at all times. The result of these Eaton features is long, trouble-free axle life, greatest possible vehicle utility at lowest possible cost.

EATON
2-Speed Truck
AXLES

Axle Division
EATON MANUFACTURING COMPANY
CLEVELAND, OHIO

PRODUCTS: Sodium Cooled, Poppet, and Free Valves • Tappets • Hydraulic Valve Lifters • Valve Seat Inserts • Jet Engine Parts • Rotor Pumps • Motor Truck Axles • Permanent Mold Gray Iron Castings • Heater Defroster Units • Snap Rings Springtites • Spring Washers • Cold Drawn Steel • Stampings • Leaf and Coil Springs • Dynamatic Drives, Brakes, Dynamometers



Convert Your Circular Rig to a . . .

McDONOUGH BAND MILL

and pay for it with sawdust savings.

The savings in sawdust alone will give you up to ⅓ more lumber and pay for a McDonough 54" Band Mill in a surprisingly short time. The added production from faster sawing and the better lumber obtained by band sawing will give you *extra* profit every day.

IT IS EASY TO CONVERT to a McDonough Band Mill by using the circular saw husk to drive the band mill, the carriage, an edger or all three. Detailed plans are available. McDonough Band Mills have the same rugged construction as the widely known McDonough Vertical Band Resaws. Knife edge saw tension insures accuracy . . . solid bottom flywheel maintains saw speed . . . heavy duty Timken bearings reduce maintenance. Top saw guide on sawyer side is standard.

McDonough Band Mills are also available complete with carriages. The many outstanding features which characterize McDonough Band Mills assure long life, simplicity of maintenance and low operating costs.

See your McDonough Dealer or write today for full information.

WORLD'S LARGEST PRODUCERS OF BAND RESAWS

McDONOUGH MANUFACTURING CO.
1502 Galloway • Eau Claire Wis.

JUST ADDED:
4 More Dry Kilns.
Our Capacity now
1¼ Million Bd. Ft.
per Charge.

WE ARE ALL SET . . . . To Give Your Orders Careful Attention and Prompt Shipment. . . . .

WE NEVER STOP MANUFACTURING

Ponderosa and Sugar Pine from our own large resources . . . top quality kiln-dried interior trim, jambs, frames, incense cedar venetian blind slats, glued-up panels, cut stock, box shook . . . **What You Want, When You Want It!**

Ralph L. Smith Is Your Dependable Source of Supply.

The Ralph L. SMITH Lumber Company

WESTERN PINE ASSOCIATION

ANDERSON, CALIFORNIA

Mixed Cars to the Trade, Our Specialty

MILLS AT ANDERSON AND CASTELLA
SALES OFFICE AT ANDERSON, CALIFORNIA

TYDOL HD Ends Valve and Ring Trouble for Salem Logging Equipment Fleet

"Our heavy-hauling fleet—powered with Mack Thermodyne and Cummins Diesel engines—transports huge bulldozers and other heavy logging equipment over rugged logging roads", says Fred S. Anunsen, Salem Heavy Hauling and Equipment Company. "Such severe service used to cause us plenty of valve and ring trouble.

"Since we switched to Tydol HD Motor Oil two years ago, our valve and ring problems have virtually disappeared. Engine maintenance has decreased all around."

Try TYDOL HD...and see!

See how much longer *your* equipment runs between major overhauls, with Tydol HD. See how it stops sludge problems by keeping moisture, fuel soot and "varnish" in harmless suspension. How it *gets rid* of sludge deposits that *other* oils failed to remove.

See how Tydol HD reduces wear by neutralizing combustion acids that cause pitting and corrosion. Yes, see what you save with the oil that *cleans* as it *protects* as it *lubricates* —Tydol HD.

TIDE WATER ASSOCIATED OIL COMPANY
(WESTERN DIVISION)

3 GREAT OILS for Heavy Duty Logging

100% paraffin base high V. I. motor oils, scientifically compounded with selected additives for heavy duty.

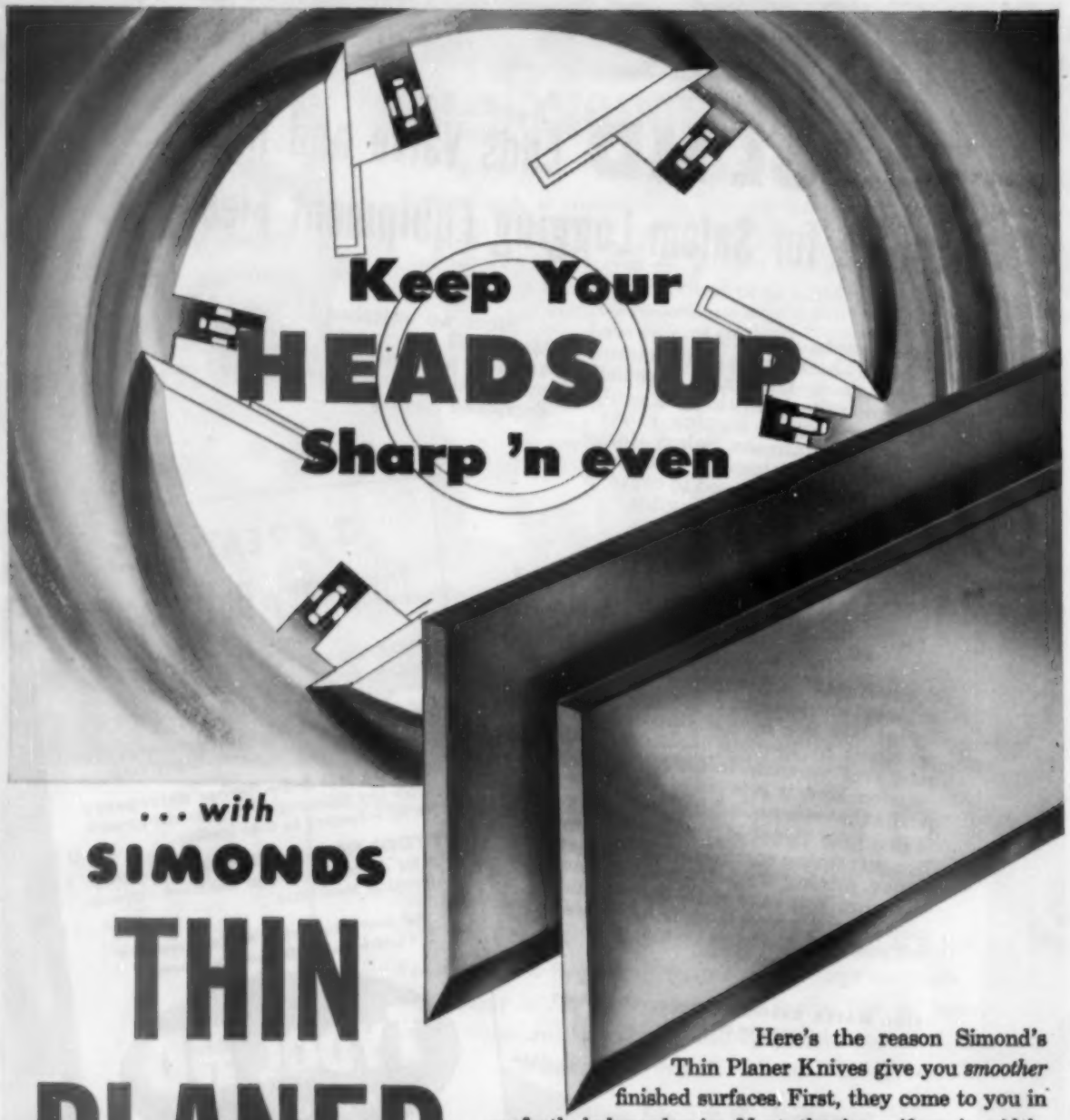
TYDOL HD—*High detergency* ...for any type engine in normal heavy duty.

TYDOL HD S-1—*Higher detergency* ...for any type engine in stop-and-go service or subjected to over-loading.

TYDOL HD S-2—*Highest detergency* ...for diesel engines in the most extreme operating conditions.

Ask your local Flying "A" Representative which Tydol HD meets your needs.

TYDOL HD
MOTOR OIL



... with
SIMONDS
THIN PLANER KNIVES

Here's the reason Simond's Thin Planer Knives give you *smoother* finished surfaces. First, they come to you in perfectly balanced pairs. Next, they're uniform in width, thickness, and bevel. In the head, each knife carries its full share of the load.

Simonds makes 'em that way from Simonds-made steel, uniformly hardened and tempered for maximum toughness and edge-holding qualities, and precision ground for balance and size.

The result — a longer-lasting knife that cuts smoother — resists heat generated by fast feeds 'n speeds. You'll want to try 'em — see and save the difference. Call your Simonds Distributor for a set today.

SIMONDS
SAW AND STEEL CO.
FITCHBURG, MASS.

Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon
Canadian Factory in Montreal, Que.
Simonds Divisions: Simonds Steel Mill, Lockport, N. Y.
Simonds Abrasive Co., Phila., Pa., and Arvida, Que., Canada

HERE IT IS . . . THE NEW LIGHTWEIGHT

TRAILMOBILE

Logging Dolly

1. adjustable reach pole
2. it weighs its own load

3. free-swinging bunk that locks when loading
4. water-cooled brakes

This new lighterweight Trailmobile logging dolly uses a heavy duty trunnion suspension and heavy duty tubular axles with tapered spindles for maximum service and minimum maintenance.

Water-cooled air-operated brakes (either 16½ x 10¼ or 10" available) assure positive stopping under a full load of logs. The 8' bunk is engineered to take maximum load without strain. A hydraulic scale gives exact weight of entire load. Bunk turns freely on curves, but locks in place during loading operations.

For complete information on the NEW TRAILMOBILE LOGGING DOLLY call or write the nearest Trailmobile Branch Office

Berkeley, Cal. — 901 Gilman St.—Landscape 5-0570

Portland, Ore. — Riddell Trailer & Equipment Co. 2166 N. W. Wilson—Atwater 2173

Seattle, Wash. — Riddell & Long 153 Michigan—Rainier 5-5595

Spokane, Wash. — Critzer Equipment Co. P.O. Box 152, East Front St.—Keystone 3890

TRAILMOBILE INC.

The Trend is to **TRAILMOBILE**

Subsidiary of Pullman Incorporated

Peoria Malleable Iron Castings are used for vital parts of this Allis-Chalmers AD Grader building a logging road in Oregon.
PEORIA MALLEABLE CASTINGS COMPANY
CHAIN MAKERS FOR OVER 30 YEARS

PEORIA
MALLEABLE IRON

makes a rugged casting ...a rugged chain!

Peoria Malleable Iron castings meet the exacting specifications demanded by Allis-Chalmers and other heavy equipment manufacturers. This same top-quality malleable iron goes into Peoria Chain—your dependable chain for logging and lumbering. Specify PEORIA when you buy.

H Class Drive Chain

PEORIA CHAIN COMPANY

103 S. W. Front Ave. Portland 4, Oregon
George E. Zweifel Phone Be 0043

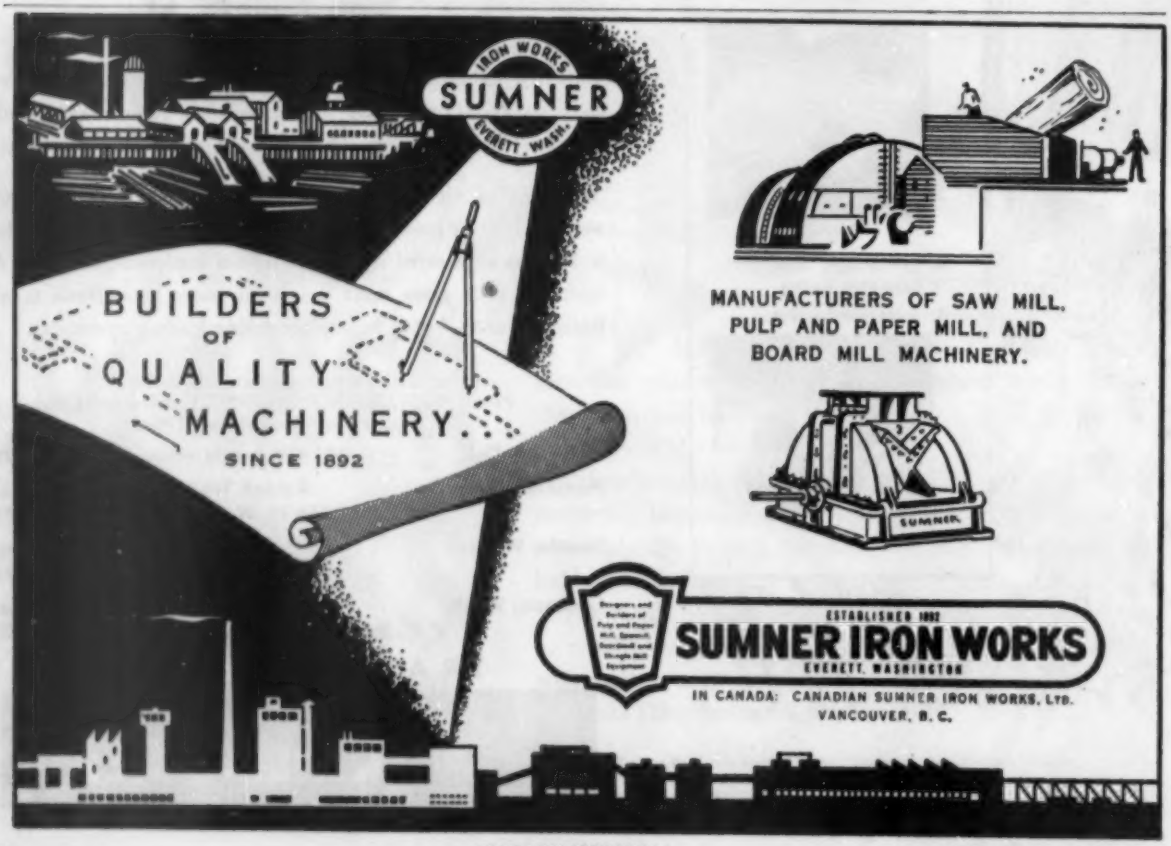
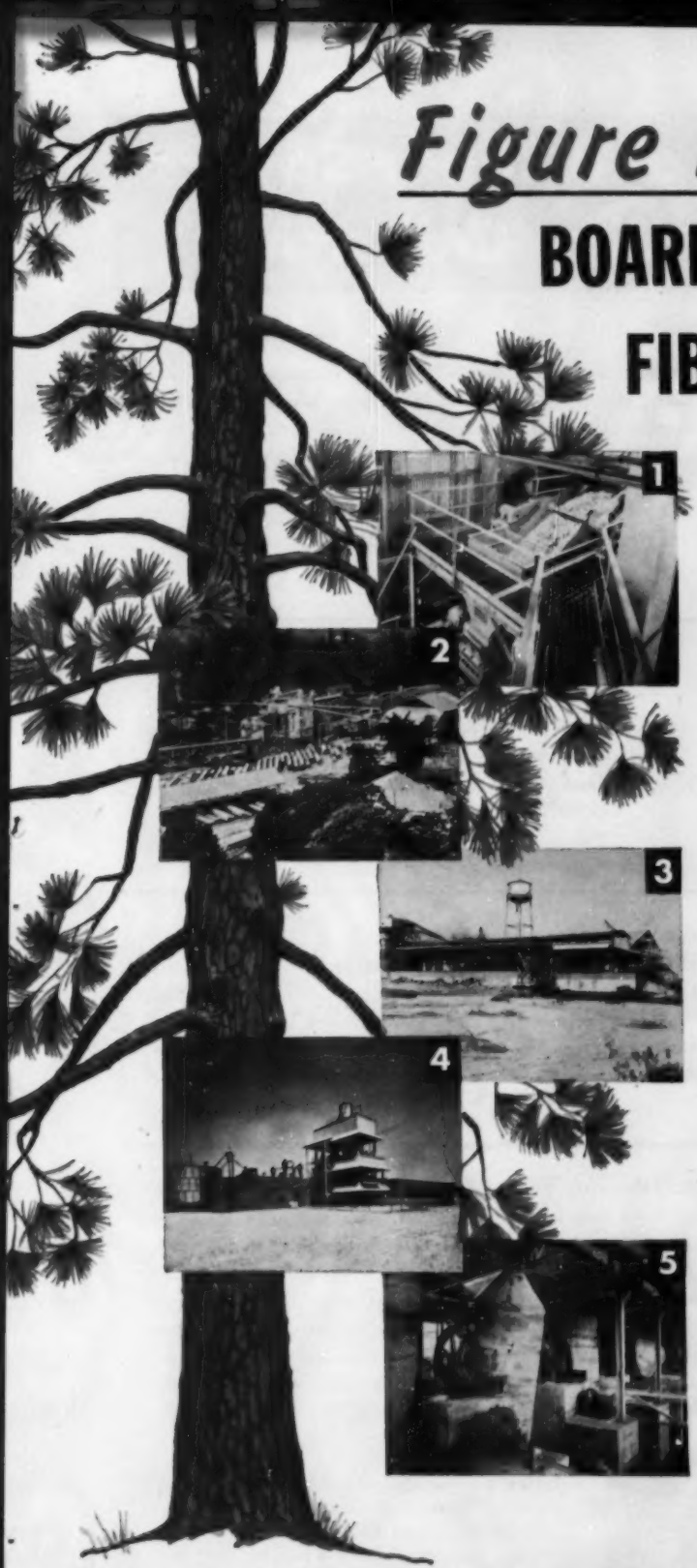


Figure it this way—

BOARD FEET plus USABLE FIBRE and CHEMICALS



There's a lot more to a tree than just "lumber," and you can't afford to waste an ounce of it. Blaw-Knox can show you how to utilize and profit from slabs, bark, branchwood, etc., with facilities designed to fit your mill's raw material situation.

1 — CHIPS

A chipping plant to suit your particular mill.

2 — HARDBOARD

A mill to make high-quality board without debarking, by the ALLboard Process (Anderson-Lighthall Process).

3 — SOFTBOARD

A plant laid out and equipped to produce softboard alone or in combination with hardboard.

4 — CHEMICALS

A solvent extraction plant which can be adapted to recover chemicals from bark and wood.

5 — PULP

Digesters in any capacity.

The best utilization of your raw materials will result from our careful study of *your* markets, *your* transportation, *your* present equipment. When the most profitable use is determined, Chemical Plants Division engineers will design, construct and equip the project. We have the know-how to handle any type project from a modification of your present facilities to a complete new wood utilization mill.

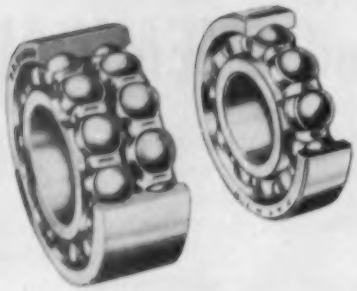
A Chemical Plants specialist will be glad to discuss your wood utilization problem with you and your engineers.

1953 Blaw-Knox Co.

BLAW-KNOX COMPANY
CHEMICAL PLANTS DIVISION
PITTSBURGH 22, PA.
TULSA 1 • PHILADELPHIA 3
BIRMINGHAM 3 • NEW YORK 17
CHICAGO 1 • WASHINGTON 5, D.C.
SAN FRANCISCO 5

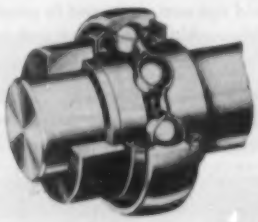
BLAW-KNOX

Cost Savers and Labor Savers for Progressive Industries

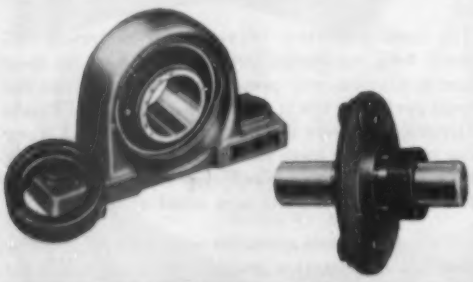


Radial Ball Bearings . . . Fafnir maximum capacity or filling slot type Ball Bearings are used where the ultimate capacity in a specific bearing size is required. Their larger complement of balls offers high radial capacity and assures greater economy through longer service life. Moderate thrust capacity in either direction. Many variations, including shielded types, to meet specific conditions.

All types of Shielded and Sealed Ball Bearings . . . grease shield, felt seal, Mechani-Seal, Plya-Seal and combinations of these.



Wide Inner Ring Ball Bearing with Self-Locking Collar . . . easiest of all bearings to install: just a twist of the wrist to lock on shaft. Counterbored, eccentric cam, mated construction of collar and inner ring assures positive locking action without set screws, locknuts, or adapters.



Ball Bearing Power Transmission Units . . . in both standard and heavy duty series. Available with labyrinth type Fafnir Mechani-Seals and with combination labyrinth and felt seals. Self-aligning. Can be mounted in any position. *Fafnir Flangette* . . . a low-cost, easy-to-install, flange-mounted ball bearing unit. Pair of pressed steel flanges bolts to practically any part of machine. Provides light weight, compact, sturdy housing for Fafnir Wide Inner Ring Bearing with Self-Locking Collar and Efficient Seals.

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

MORE AND MORE manufacturers are specifying Fafnir Ball Bearings because of: (1) their uniformly high quality (2) wide range of types and sizes (3) the Fafnir "attitude and aptitude" . . . a way of looking at bearing problems from the designer's viewpoint and aptitude for supplying the right bearing to fit the need. The Fafnir Bearing Company, New Britain, Connecticut.

STANDARD ENGINEER'S REPORT

DATA

LUBRICANT Calol Vistac Oil

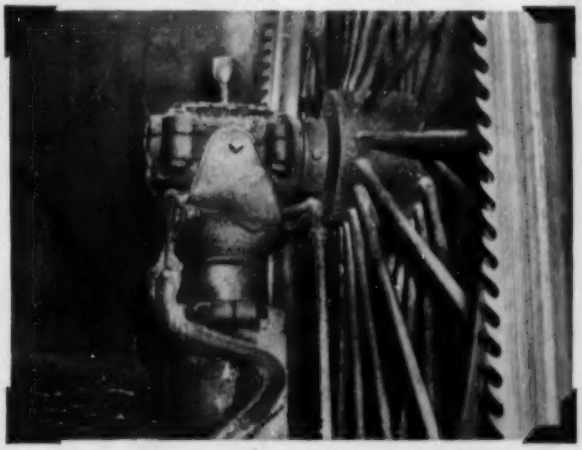
UNITS Air cylinders and bearings

OPERATION Sawmill

CONDITIONS Wide variations in temperature—constant moisture

FIRM Schmidt Bros., Greer, Idaho

Wide-range oil eliminates seasonal changes!



CALOL VISTAC OIL is the only oil Schmidt Bros., Greer, Idaho, have found that lubricates sawmill air cylinders and headrig bearings the year around without changing grades. At least two grades of each competitive brand tried were required. Temperatures in this area go from about 38° below to 90° above. Even in the hottest weather, viscous and tacky Calol Vistac Oil 28X sticks on the bandmill bearings and Calol Vistac Oil 9X on the air cylinder walls, yet maintain proper flow when it is extremely cold. This uniform lubrication without seasonal switching to different grades reduces wear, cuts repairs, saves man-hours, according to Elmer Davis, Mill Foreman.

REMARKS: The Schmidt Bros. sawmill operations are in a high valley in the mountains of central Idaho. Although temperature variations are great and storm conditions severe, the mill runs all year. Logs are cold-decked and stored in a pond. Exhausts piped from the mill help keep it from freezing over.

FREE CATALOG: "How to Save Money on Industrial, Marine, Railroad Equipment Operations," a booklet full of valuable information is ready for you. Write or ask for your free copy today.

CALOL

TRADEMARK "CALOL" REG. U.S. PAT. OFF.

How CALOL VISTAC Oil cuts costs in industrial operations

Has wide use range in heavy-duty plain bearings operating in hard service, air cylinders, reduction gears, motor gear-heads, etc.; excellent air-tool lubricant—atomizes quickly and stays fluid at low temperatures.

A. Additives help form oily, pressure-resistant film...sticks on slow-moving parts and resists high temperatures.

B. Economical—small quantity will lubricate efficiently, dissipate heat.

C. Tenacious film cuts power loss and wear.

STANDARD TECHNICAL SERVICE checked this product performance. For expert help on lubrication or fuel problems, call your Standard Fuel and Lubricant Engineer or Representative; or write Standard Oil Company of California, 225 Bush St., San Francisco.

STANDARD OIL COMPANY OF CALIFORNIA

Wapakoneta "Alloy"

the toughest

VENEER KNIVES

cut easier

last longer

Exacting specifications, proper hardness and precision grinding make Wapakoneta knives cost less per square foot of production.

Knife Specialists since 1891

WEST COAST OFFICES

SAN FRANCISCO 3, California
California Saw Works

LOS ANGELES 23, California
Wagner Machinery Co.
1228 Rio Vista Avenue

TACOMA 2, Washington
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PORTLAND 12, Oregon
Wall, Lundberg and Co.

KALISPELL, Montana
Industrial Supply Co.

VANCOUVER 19, B. C.
Bingham Equipment Co., Ltd.
395 W. 8th Avenue

THE WAPAKONETA MACHINE CO.
WAPAKONETA, OHIO

SPEAR & JACKSON

Band Saws

Spear & Jackson Bandsaws can be counted on to perform with the best. Into them go the finest steel obtainable and a quality of workmanship in welding, swaging, grinding, and tensioning, gained from years of sawmaking experience.

Spear & Jackson Bandsaws are custom-made to your exact specifications at our factory in Eugene, Oregon. Large and small operators alike are satisfied users.

SPEAR & JACKSON

EUGENE, OREGON

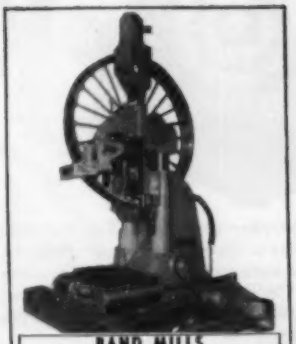
BAND, GANG, CIRCULAR SAWS, TEETH and HOLDERS

"The Saw Without A Flaw"

HEAPS
Time Proven
SAWMILL EQUIPMENT

PRODUCING

Accurately Cut Lumber — Maximum Capacity
Minimum Maintenance — Minimum Labor



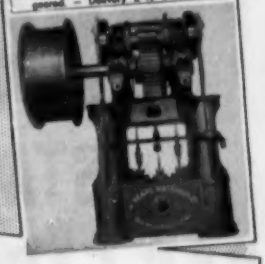
BAND MILLS
5, 6, 7, 8, 9 or 10 foot—Single or double cutting
Delivery 2 to 3 months

ONE-MAN OR NO-MAN CARRIAGES
Air, air-hydraulic or electric
Delivery 2 to 3 months

BAND RESAWS
5, 6 or 7 foot.
4 or 6 roll or line bar.
Delivery 2 to 4 months

MANUAL DOGGING CARRIAGES
All sizes — Delivery 1 to 2 months

TWIN FEED CARRIAGE ENGINES
8 x 10, 13 x 16 or 15 x 20 — Straight line or geared — Delivery 2 to 3 months



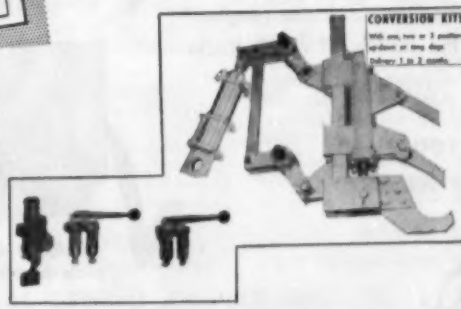
GUNSHOT CARRIAGE FEEDS
8, 10, 12 or 14 foot—Stationary or revolving—Delivery 2 to 4 months

HEAVY DUTY, OSCILLATING, GANG SAWS
30, 36 or 42 inch round log or cant—Delivery 3 months.
(18 or 24 inch delivered from stock.)

HYDRAULIC CARRIAGE FEEDS
Delivery 3 to 6 months

HEAVY DUTY EDGERS
4 x 36 inch to 12 x 84 inch — Single or double — manual, air, hydraulic or electric dish — Delivery 1 to 3 months

CONVERSION KITS
With one, two or 3 position up-down or tong dogs
Delivery 1 to 2 months



ELECTRIC CARRIAGE SET WORKS
All types — Delivery 2 to 8 weeks.

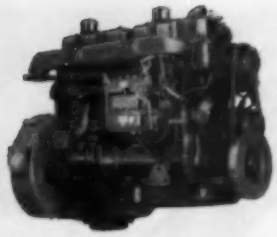
COMPLETE MILL EQUIPMENT CONTRACTING

"Heaps" heavy duty equipment is illustrated above.
"Heaps" light and medium duty equipment is carried in stock.
YOUR ENQUIRIES WILL RECEIVE PROMPT ATTENTION

HEAPS, WATEROUS *Limited*

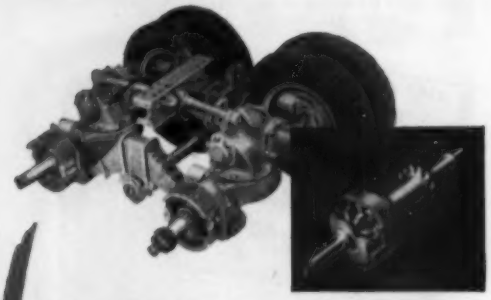
NEW WESTMINSTER, B. C. CANADA

CHECK 'EM OFF



Plentiful Horsepower. Mack provides the right powerplant, gasoline or diesel, to haul most efficiently, most profitably for each specific operation. Complete range of engine options up to 400 horsepower. Coupled with the most rugged transmission or torque converters yet developed.

THE INSIDE REASONS FOR MACK'S STAND-OUT $$$ EARNING POWER

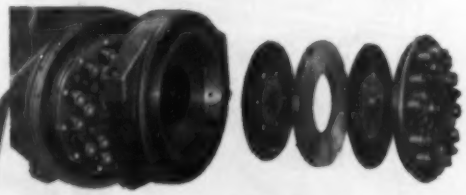


Balanced Bogie With Power-Divider. Only Mack six-wheelers offer the unique advantage of Mack's Balanced Bogie, incorporating the exclusive Power-Divider. With the Mack Power-Divider torque is distributed between bogie axles in proportion to traction, thus enabling Macks to pull through where other trucks mire in.

Keeping going under conditions that stop other trucks cold—carrying big payloads . . . on fast schedules . . . in the roughest operations—that's what points up the ability of Mack trucks to build greater profits for you.

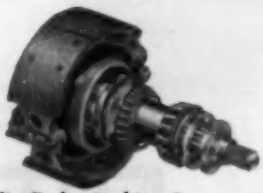
Power-Steering. Hydraulic power-steering permits effortless, fast steering and positive, shockless control.

WHEREVER YOU SEE A TOUGH JOB . . .
THERE IS WHERE YOU SEE MACKS



Air-Assist Clutch. Operation of the big, double-plate clutch is virtually effortless, reduces driver fatigue.

Mack TRUCKS

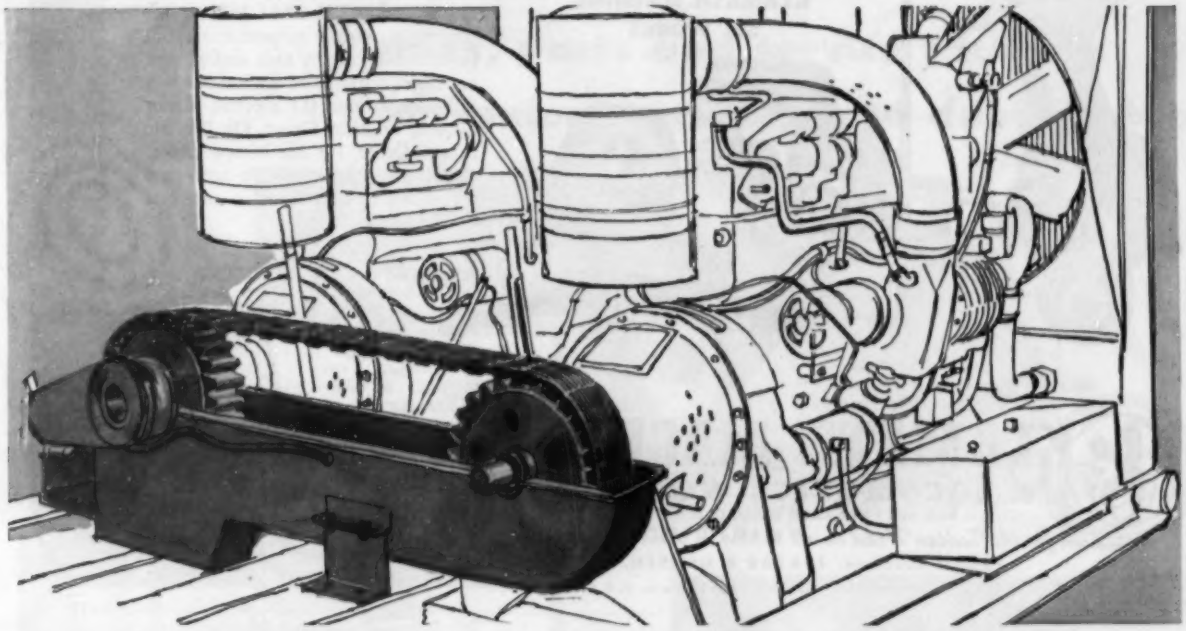


Hydraulic Turbo-Braking Systems and powerful air-actuated brakes provide utmost safety for downhill going, assure safe and positive driver control at all times.

Mack Trucks—Los Angeles • Denver • San Francisco
Seattle • Portland • Salt Lake City • Factory branches
and distributors in all principal cities for service and parts.

2377

Morse HY-VO DRIVE for a new age in power transmission!



How compounding with HY-VO could save you as much as $4,560

Now, gain new advantages in buying and compounding smaller, higher speed engines with Morse Hy-Vo Drive.

You make major cost savings.

The total cost of two high-speed engines and the Hy-Vo Drives with which they are compounded will usually be considerably less than a single large engine of equivalent horsepower. A brief look at some figures will show how this works . . .

For example, if you needed 250 continuous horsepower at 1200 rpm., you could: 1) Buy a manufacturer's 250 hp., 1200 rpm. engine, which lists for $13,380; 2) buy the 250 hp., 1800 rpm. engine for $11,930 (using Hy-Vo as a connection and reduction drive, also eliminates the costly flexible coupling normally required in choice No. 1); 3) or, use two 130 hp., 1800 rpm. engines, listing for a total of $8,820, and use Hy-Vo as your compounding drive.

With the 250 hp., 1800 rpm. engine, you save $1,450, more than enough to pay for your Hy-Vo Drive. Compounding two 130 hp., 1800 rpm. engines, you save $4,560 over base list cost of the 250 hp., 1200 rpm. engine.

From this saving you could pay for your Hy-Vo Drive and bank several thousand dollars. In most cases, too, Hy-Vo will be so narrow it will eliminate costs of outboard bearings and mountings, with the bonus that single-engine operation is possible under reduced power requirement.

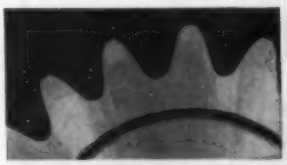
Other power transmission methods generally have either inherent restrictions on rotative speeds and velocities that limit 200 hp. or larger engines to 1200 rpm., or are too costly. Hy-Vo has far greater upper limits, with relatively lower cost.

Because of exceptional rotative speeds and velocities, Hy-Vo brings you comparable savings in electric motors, too. Write us for details on compounding with Morse Hy-Vo Drive.

MORSE CHAIN COMPANY

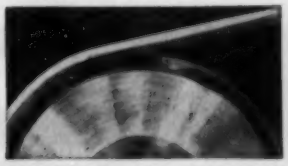
7601 Central Ave. • Detroit 10, Michigan

SOME DESIGN FACTORS BEHIND HY-VO'S SUCCESS . . .



Hy-Vo's many design and manufacturing refinements result in a drive with unusual power transmitting capacity. Note involute tooth design of Hy-Vo Sprockets . . .

. . . and the new, Hy-Vo Compensating Rolling Joint, which always shifts the pitch line automatically as the Hy-Vo Chain engages the involute teeth of the sprocket.



Chain follows a path truly tangent to sprocket pitch circle, virtually eliminating chordal action. A new, balanced link design greatly improves stress distribution.

MORSE BW

MECHANICAL POWER TRANSMISSION PRODUCTS

ACCURATE to 1/64 INCH

Side view of
KLAMATH MACHINE SET WORKS

In addition to its precise accuracy, the KLAMATH MACHINE Set Works is widely adaptable—it can be installed on any rack and pinion carriage. You have a choice of 3 different drives: (1) Electric Motor Driven Friction Drive, (2) Electric Motor Drive, (3) Air Motor Drive. Other advantages—which are many—are clearly described in our *new* CATALOG.

A copy of this *new* CATALOG will be sent to Sawmill operators on request. The CATALOG is the result of many months of careful preparation—to furnish information of value to Sawmill men.

KLAMATH MACHINE & LOCOMOTIVE WORKS INC.
P. O. BOX 908 • KLAMATH FALLS, OREGON, U. S. A.
Look for the Indian Head on all KLAMATH MACHINE *products*
Export Division: FRAZAR & HANSEN, Ltd.
301 Clay Street, San Francisco 11, California, U. S. A.

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Are Improved for Consumer Acceptance
When You Make Them Water Repellent With Vanseal Wax.
Mix the Vanseal Wax With Water (1:3 or 1:5)
And Dip the Veneer Green or Dry.

For Free Demonstration At Your Mill Write To

R. T. VANDERBILT CO. INC.
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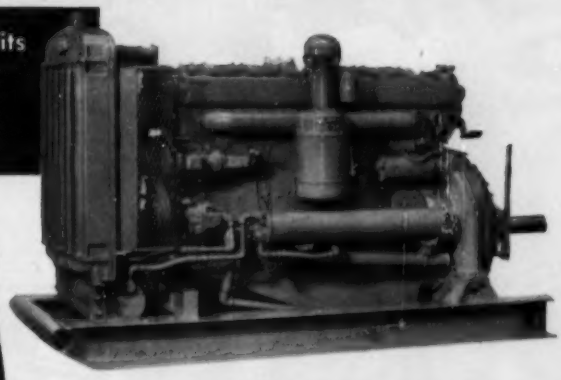
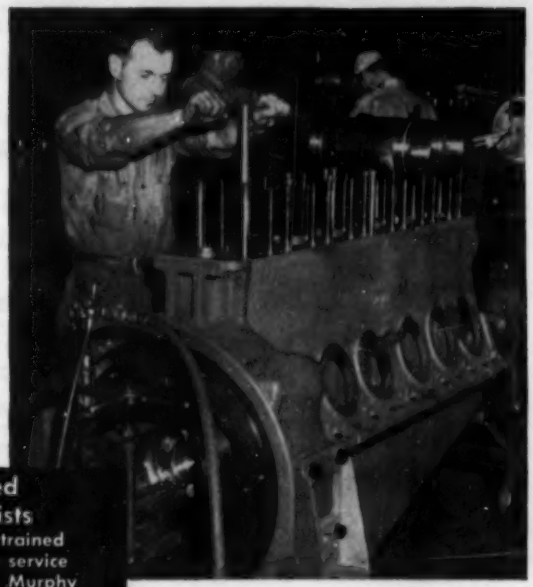
Wherever you are

you will find MURPHY DIESEL
sales, parts and service facilities
convenient, prompt and dependable

Engines and Power Units
Generator Sets
Mech-Elec Units
90 to 240 H.P.
60 to 140 K.W.



Genuine Factory Engineered Parts
Strategically located stocks of genuine Murphy Diesel parts minimize down time for repair or overhaul



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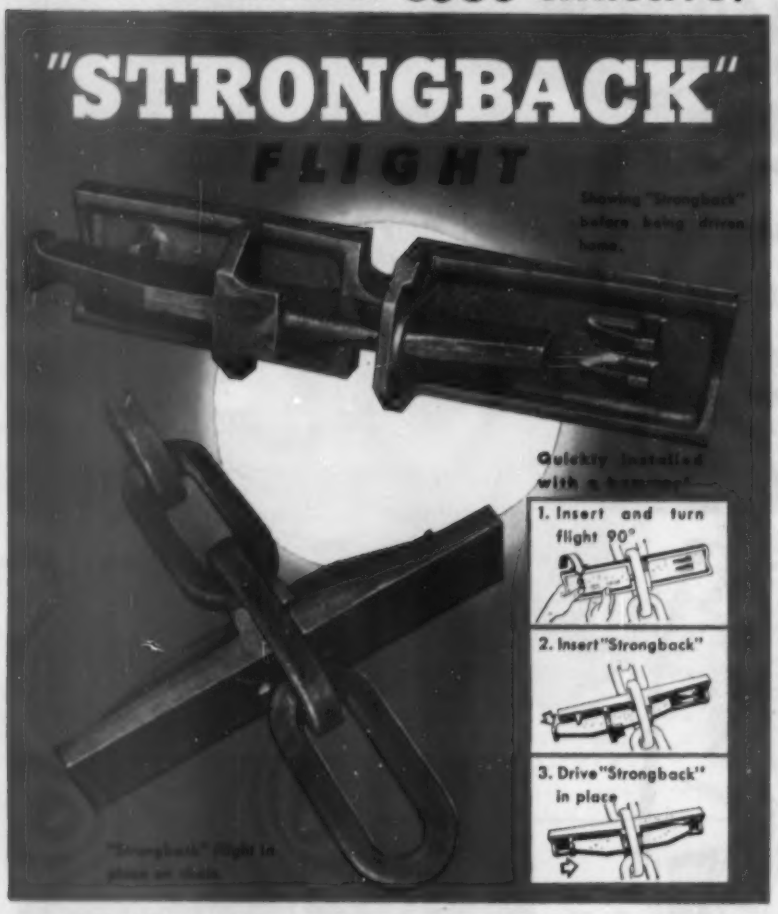
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U. S., Canada Vital Suppliers of Lumber For Korea Re-Build

In the next few years, large quantities of forest products will be required for the reconstruction of war-torn Korea. The United Nations Korean Reconstruction Agency with headquarters in New York is spearheading this re-building. Mr. John L. Thurston, acting chief of the American Regional Office of UNKRA, herewith describes the situation:

"The overall quantity of lumber, plywood and similar products which will be required in the reconstruction of Korea is, of course, very considerable, especially since significant parts of the previously near-depleted forests have virtually disappeared in the course of the fighting since 1950. We have, however, no estimate of the quantities of different products which will be needed in the course of the reconstruction program.

"Insofar as purchases of this Agency are concerned, the greater part of our requirements is for softwood construction lumber. Between 10 and 15 million BF of this type of lumber has already been purchased in the U.S. and Canada and shipped overseas. The part of the lumber purchased in the American West Coast market was handled on our behalf by the Corps of Engineers, U.S. Army, and we anticipate that many of our other purchases in the U.S. market will be handled similarly in the future."

In the Canadian market, the Canadian Commercial Corporation acts as UNKRA's agent and the procurement of Canadian lumber therefore is handled by them. Should UNKRA, in the future, decide to purchase U.S. forest products direct from suppliers, this would be done by means of Invitations-to-Bid, which would be advertised in the "Small Business Memo", issued by the Office of Small Business, Foreign Operations Administration, Washington, D.C., and in the 'U.S. Government Advertiser."

Saw-Timber Volume in Rocky Mountain States

State	Billions of Board Feet
Arizona	16
Colorado	28
Idaho	61
Montana	56
New Mexico, Nevada & Utah	13
Wyoming	11

(Source: Northern Rocky Mountain Forest & Range Experiment Station, Oct. 1950, latest figures available.)

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1953 Major Trends and Developments

• SMALL WOOD LOTS—Small owners holding about 75 percent of the privately owned timber land in the United States can well be the key to the nation's timber supply situation. U. S. Chief Forester R. E. McArdle last year estimated that 15 percent of these lands are "in the good management class." There is a distinct and definite trend for the lumber industry to offer actual technical forestry help to small timberland owners, to the end that these lands be managed intelligently and that they, like the holdings of most large timberland owners, be made to produce maximum timber crops. St. Regis Paper Co. and Nickey Bros., Inc., among others, did a lot of work in this direction in 1953. Stimulation of better forestry on the part of small woodland owners is perhaps the No. 1 problem of the American Forest Industries.

• ALASKA—Alaska loomed large on the American forestry horizon in 1953. All signs point to more developments in Alaska in the years just ahead than anywhere else in America. In 1953 Alaska's first plywood plant, the Alaska Plywood Corp., came into production, and Alaska's largest logging enterprise was started, namely that of the Ketchikan Pulp Co., whose $40,000,000 plant at Ketchikan will shortly be turning out high alpha dissolving pulp to be shipped to Eastern U. S. During the year Japanese interests announced plans for building a sawmill and pulp mill in Alaska if legal and financial hurdles can be surmounted. The Pacific Northern Timber Co. of Portland has plans well developed for building a sawmill and pulp mill at Wrangell; and the Georgia-Pacific Plywood Co. also announced its determination to build a 1000-ton newsprint plant. A new plywood plant and sawmill were also announced. Several other forest industry projects are also in the wind.

• SALVAGE—Never before in the history of the industry has as much salvage logging been done as in 1953. Much of this was forced on timber owners because of the tremendous devastation by insects and disease. The availability and adaptability of modern trucks and logging equipment has made possible the successful salvage of great quantities of raw material that in years gone by would have remained untouched. Also the rising tide of integration of manufacturing facilities has made possible the utilization of this type of raw material. One of the outstanding and spectacular 1953 salvage operations was that of fire-killed timber on the Olympic Peninsula in Northwestern Washington, where a million feet daily average was removed. These operations are rivalled only by the great salvage job in the Tillamook, Ore., area, which was first swept by fire 20 years ago and where burned timber is still being removed.

• OLYMPIC PARK—During the years steps were taken to initiate a program whereby mature and over-ripe timber in the near-million-acre Olympic National Park in Washington, may in one way or another be made available for the manufacture of forest products. This program is important and difficult of accomplishment because of its high level political, social and economic aspects.

• INSECTS AND DISEASE—Ranking right up near the top of the forest industries' problems, as yet only partially solved, is that of combatting destruction of America's forests by insects and disease. Timber losses due to these two causes are now placed at 3,500,000,000 feet annually. Large scale spraying has for the time being apparently checked the spruce budworm infestations in Eastern Oregon and in New Brunswick, Canada, but no panacea has as yet been found to check or prevent the ravages of the bark beetles. Through the co-ordinate efforts of industry, state and federal agencies, however, much progress in this direction was made in 1953. These efforts will be intensified in 1954. Control efforts are closely tied in with access roads (see below).

• CONTROLS AND REGULATIONS—For the first time in years the forest industries in 1953 were able to operate without federal price controls. And while the threat of government regulations still exists to some degree, it is not at the moment the terrifying thing it was during the past twenty years. The theory of timber exhaustion so vigorously promoted by the Forest Service and poorly informed conservation groups, has been exploded, partly through its own impartial studies. New timber inventories released in 1953, the development of tree farms, now aggregating over 30,000,000 acres, and closer utilization indicate that growth and drain of timber in the United States is now very nearly in balance.

• ACCESS ROADS—Much work was done last year in an effort to provide more access roads to open up federally owned timber areas and to make such timber available for the manufacture of forest products. The U. S. Forest Service developed a vast access road building program. The Forest Service announced that its 5-year access roads program calls for the expenditure of $256,000,000. Something like $15,000,000 has been earmarked for road construction during the fiscal year ending June 30, 1954. On top of the Forest Service program must be added those of other agencies such as the Bureau of Land Management and the thousands of miles of access roads under construction and planned by private operators. Complete details on the Access Road situation appeared in the September and October issues of THE LUMBERMAN.

• TREE FARMS—Tree Farms in 1953 were able to provide documentary proof that the tree farm idea, born in the State of Washington 13 years ago, is sound and productive of real results. Over 30,000,000 acres of timberlands in the United States are now under certified tree farm management. Tree farmers large and small at the meeting in December of the Western Forestry & Conservation Association presented definite proof that tree farming pays and that management and harvesting techniques are evolving which will insure a steadily mounting volume of forest wealth from the nation's tree farms.

• LABOR RELATIONS—With the few exceptions unusually good labor relations prevailed in the forest industries during the past year. There were prolonged shut downs in British Columbia with resulting loss of production. In the United States there were no general work stoppages although several large individual operations were closed on account of labor difficulties.

• FINANCIAL—The enactment by Congress during the year of a bill which will make it legal for National Banks to accept standing timber as collateral for bank loans was a major development in 1953. The industry has long sought such legislation. The next step in this direction will be to obtain similar legislation covering state banks.

VOLUME 81 THE Lumberman NUMBER 4

MARCH 25, 1954

THE FOREST INDUSTRIES—1954

With one of the outstanding single years in their history behind them, forest industries leaders do not foresee any let-down for 1954. This Annual Review Number presents a well-rounded picture of the background in every major phase of activity during 1953, throughout U.S., Canada and the world.

The past year was in many respects more nearly normal the world over than any the forest industries have witnessed in twenty years. It was not normal in the sense that present conditions are as they were two decades ago, but they are normal in the sense that the industry is free of federal regulations of one kind or another and free in the sense that the laws of supply and demand now have free play.

The Forest Industries, collectively, which rank among the first half-dozen great industries in the United States from the standpoint of value of the product shipped and actually first among major U. S. industries from the standpoint of number of plants, have one great and tremendous distinction: the raw material, trees, is a perpetual resource. The south, once thought "cut-out," in 1953 produced practically as much lumber alone as in the so-called palmy days, and on top of lumber, tremendous quantities of pulp, plywood and other forest products. In the west the forest industries had one of their banner years. And the mills in the Lake States produced forest products worth far more than in the roaring nineties.

Production-wise the forest industries did very well last year. For almost every region and for every species and item, production in 1953 exceeded that of 1952. The production situation is indicated in the accompanying compilation.

Forest industry prognosticators are somewhat cautious about "guessing" 1954 production and for the most part are inclined to follow the predictions of economists that production generally in most industries will be down a little in 1954 perhaps from three to five percent. However, one forest industry forecaster says: "Some forecasters predict that the slight drop in private residential construction may be offset by increased public housing activity, plus a pick-up in the school building program and in the modernization and repair market."

Forecasts indicate that there will be close to 1,000,000 net homes started in 1954.

As a result of new mills coming into production, output of Douglas fir plywood should show an increase in 1954.

With three or four new hardboard plants in operation, hardboard production in 1954 should be considerably more than in 1953.

Log production to supply the needs of sawmills, pulp mills, shingle mills, plywood plants and other industry plants, should equal or exceed that of 1953.

Pricewise the industry did not do as well in 1953 as in 1952. Prices on lumber all over America were down and Douglas fir plywood prices did a nose dive, recovering somewhat by October. The market and price trends in the west are fully and ably discussed elsewhere in this ANNUAL REVIEW by H. J. Cox of the Lumbermen's Buying Service, Eugene, Oregon.

Maple: A Good Example

While not large in comparison with Southern Pine or Douglas fir, the nevertheless important northern hard maple flooring folks had one of their biggest and best years. With sales of northern hard maple flooring for the year 1953 totaling 53,000,000 feet, and the December sales accounting for the highest single volume month in the year, northern flooring producers, well satisfied with the 17% increase in bookings over the year 1952, are expecting continued good business in the six months ahead, according to L. M. Clady, Secretary-Manager of the Maple Flooring Manufacturers Association.

Mr. Clady said statistical figures reported by both member and non-member mills, indicate last year's shipments of 49,000,000 feet increased 11.2% over the year 1952. Production in 1953 totaled 47,500,000 feet for an increase of 2% over the previous year and stocks and unfilled orders as of January 1, 1954, totaled 9,000,000 feet each, he said.

"According to association market surveys, increased building activity in the school, recreational, commercial and modernization fields, should account for a much larger volume of maple flooring sales this year than noted above for 1953," Mr. Clady commented.

A Big Selling Job

Says J. E. Bemis, president of the Ozan Lumber Co., Prescott, Arkansas, and president of the National Lumber Manufacturers Association and for the past year head of the Southern Pine Association: "The economic cycle has turned again toward a buyers' market and we can't expect to do volume business at the same old stand unless we 'supermarketize' our industry. This means that we

Forest Industries Production Data

	1952	1953	1954 Estimate
DOUGLAS FIR Western Oregon, Washington, California	10,304,000,000 Ft. BM	10,292,898,000 Ft. BM	10,000,000,000 Ft. BM—Plus
British Columbia (all species)	3,336,813,000 Ft. BM	3,650,000,000 Ft. BM	3,700,000,000 Ft. BM
WESTERN PINE Washington, Oregon, California Idaho, Montana, Arizona, New Mexico	6,930,000,000 Ft. BM	7,678,000,000 Ft. BM	7,300,000,000 Ft. BM
SOUTHERN PINE Deep South	8,775,000,000 Ft. BM	8,800,000,000 Ft. BM	8,500,000,000 Ft. BM
REDWOOD California	872,000,000 Ft. BM	869,000,000 Ft. BM	825,555,000 Ft. BM
NORTHERN HEMLOCK and HARDWOOD Lake States	900,000,000 Ft. BM	900,000,000 Ft. BM	875,000,000 Ft. BM
DOUGLAS FIR PLYWOOD Washington, Oregon, California	3,100,000,000 Sq. Ft.	3,500,000,000 Sq. Ft.	3,600,000,000 Sq. Ft.
British Columbia	440,000,000 Sq. Ft.	580,000,000 Sq. Ft.	580,000,000 Sq. Ft.
HARDBOARD Eleven Western States and British Columbia	550,000,000 Sq. Ft.	508,000,000 Sq. Ft.	730,000,000 Sq. Ft.
RED CEDAR SHINGLES		5,000,000 Sq. Ft.	5,000,000 Sq. Ft.

NOTE: THE LUMBERMAN presents production figures for the West, South, Lake States and British Columbia for 1952, 1953 with an estimate for 1954. This information is obtained from sources whose figures in the past have been very reliable and conservative.

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have got to offer better products and do a better job of selling what we have to offer."

Good '54 Expected in Pine

Says U. R. Armstrong, vice-president of The Hallock & Howard Lumber Co., Winchester, Idaho, and president of the Western Pine Association: "I feel optimistic about the future. The accomplishments of our past have readied and prepared our industry for what may lie ahead. We have never been so healthy. Volumewise we expect to do a good business this year."

"There is no end in sight for the present high volume of demand for our products," says G. E. Karlen, of the Karlen-Davis Lumber Co., Tacoma, and president of the West Coast Lumbermen's Association. "Ours is a growing country with an increase in population so rapid as to tax existing housing, school, church, commercial and industrial facilities. A million new houses per year is not adequate to meet the requirements of new families, obsolescence, loss from floods, fires and other causes."

Says E. B. Birmingham, president Hammond Lumber Co., Samoa, Calif., and president of the California Redwood Association: "As far as the major producers of redwood are concerned, there is no pessimism as we face 1954. The redwood industry remains optimistic and expects production and sales to be at least average when compared with other post-war years."

Despite the optimistic outlook of many industry leaders, the lumber industry does not find itself sitting in the middle of a bowl of cherries. There are many critical problems facing the wood-using industries, and among them is the disastrous onslaught of insects and disease in vast stands of timber. Beetles are currently the worst demons in the woods. The chief forester of the U. S. in his 1953 report states, "Over 12 billion board feet of spruce timber are ultimately speaking." He refers to the Engelmann spruce beetle edpidemic in western Montana and northern Idaho. Industry and federal foresters are at work to battle this pest. While control is difficult, it is not impossible.

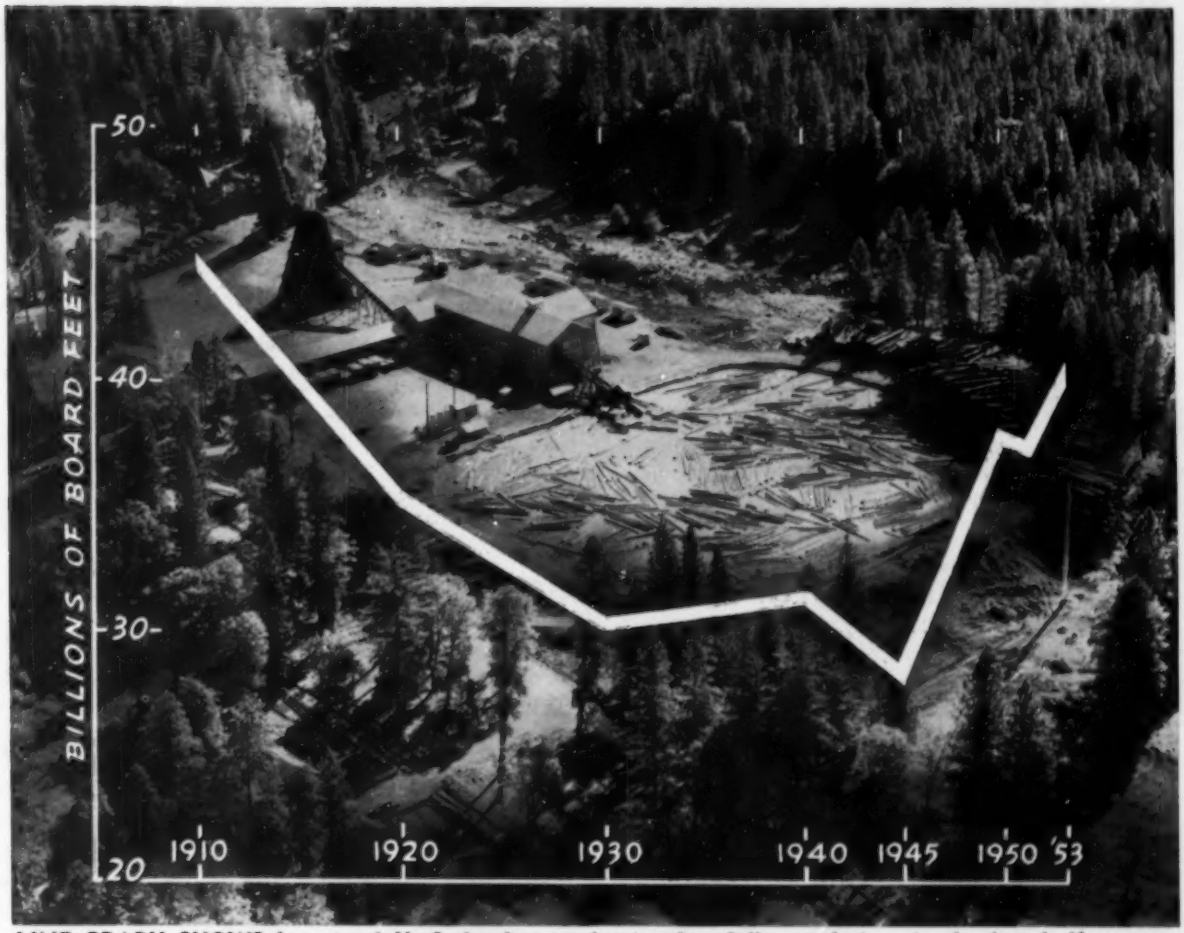
Swift work allowed successful control of the recent Engelmann spruce bark beetle outbreak in Colorado, and more recently an epidemic of southern pine bark beetles occurred in Mississippi. Cooperation by all concerned brought the epidemic under control. Bark beetle damage in the last two years in western Oregon has caused death of millions of fine Douglas fir trees and promises to grow greater; control here is difficult because of the large area involved. Spruce budworm in eastern Oregon and Washington has been serially sprayed for the last several summers with an amazingly high percentage of kill.

Record Cut, But Roads Needed

In 1953 leaders of logging and lumbering pleaded vociferously for more access roads with which to achieve better management on the rugged, inaccessible national forest lands in western U. S. While federal foresters fully realize this urgent need, it is the Congress which controls the purse strings. With an economy-minded Congress in session, the chance that the needed funds will be provided in full would seem doubtful. In the meantime, an untold volume of merchantable timber continues to rot away. The national forest cut of 1953 was 5,160,000,000 board feet, the highest on record and an increase of 742 million board feet over 1952.

No "Status Quo" Here

Little or no evidence of a "status quo" situation in the forest industries will be found here. Nearly everyone—logger, millman, forester, re-manufacturer, seller, construction man—seems to be continually moving ahead, not only in 1953, but in every post-war year. It is the drive and enthusiasm of these people that makes the forest industries the healthy one it is today.



LINE GRAPH SHOWS how total U. S. lumber production has fallen and risen in the last half-century. The mill shown here is that of the Diamond Match Co. at Lyman Springs, practically in the shadow of Mount Lassen in Northern California. Elevation here is 3500 ft. Lumber cut in this mill is hauled directly to the company's re-manufacturing plant at Chico, some 70 miles away. (Aerial photo by Western Ways, Inc., Corvallis, Oregon)

"Let's 'Supermarket' the Lumber Industry"—Bemis

By
JAMES R. BEMIS

President, National Lumber Manufacturers Association, Washington, D. C.

Mr. Bemis is also president of the Southern Pine Association.

Remember the corner grocer? Just a few years ago he used to be a pretty important business man. Nearly all of us patronized his store, although he seldom displayed more than a few rows of canned goods, about half a dozen different cuts of meat, and a handful of fresh fruits and vegetables.

Where is the corner grocer today? He still exists, and in rural areas his little store is still the hub of much activity. But in city and suburban areas the picture has changed completely. Giant supermarkets now attract our business and we frequent the corner grocery only for incidentals or in off-hours when the supermarkets are closed. There are exceptions, of course, but this is the general rule.

There is a lot to be learned from this change in buying habits, particularly by the nation's lumber manufacturers. *The economic cycle has turned again toward a buyer's market and we can't expect to do volume business at the same old stand unless we "supermarketize" our industry.*

What does this mean? *Simply, that we've got to offer better products and do a better job of selling what we have to offer.*

Adopt Progressive Techniques

How do we accomplish this? Mainly, by: (1) EXPANDED RESEARCH designed to develop new and improved wood products. (2) MORE AGGRESSIVE MERCHANDISING, including greater emphasis on product promotion and public relations.

Use of the term "supermarketize" is certainly not meant to depreciate the role of the small lumber manufacturer. But, large or small, the lumber manufacturer who hopes to weather the business clouds ahead must adopt more progressive marketing techniques.

The competition is closing in. Every day we see new markets threatened by metals, plastics and other synthetics. Through industry-

wide research we will be able to perfect new uses for our oldest renewable resource and improve its present uses. This is our first answer to the competition and the new 10-year, million-dollar research program proposed by the National Lumber Manufacturers Association is an important step in the right direction.

Wood Being Undersold

Next, comes the job of insuring that our customers—retailers, wholesalers and the public—gain a fuller appreciation of the advantages and quality of our products. *There are numerous wood products which today are being undersold—products which are infinitely superior to aluminum, plastic and steel imitations. But, unfortunately, we in the lumber industry are often the only ones who realize this superiority.*

The competition has wasted no time in hitting at this weak spot in our armor. They're selling night and day. We've made a good start in discarding our part-time selling approach. The enlarged publicity program of the National Lumber Manufacturers Association, which has taken direct aim at the growing do-it-yourself market and other neglected areas, will go a long way toward stimulating sales. But follow-up promotions by lumber manufacturers, distributors and other associations are also needed to make the program a success.

Competition From Abroad

Foreign competition is another thorn in the side of our domestic lumber industry. Our friends on the West Coast are particularly sensitive to this menace. Again, the answer would seem to be more research and better selling.

There are also many things which we as lumber manufacturers can do right in our own backyard. I doubt if there will be a lumber manufacturer who reads this who will not concede that there is room within his plant for a streamlining of operations to increase the efficiency of both manpower and materials.

And that, after all, is the important thing—that we recognize the problems which confront us. Half the battle is won if we realize where we stand and identify the problems that must be attacked.

We know our problems and we know the steps which we must take to solve those problems. Now let's all pitch in and do the job.

No End in Sight for Present High Fir Demand

By
G. E. KARLEN
President,
West Coast
Lumbermen's
Association

More than one third of the nation's softwood lumber comes from the relatively small Douglas fir region west of the Cascades in Oregon and Washington. Of the nation's 461 million acres of commercial timber, only 26 million acres make up our timber-rich, rain-belt region.

The demands on this region for high quality Douglas fir, west coast hemlock, western red cedar and Sitka spruce were terrific during both world wars. It has been even greater in the eight years since the second war. In the past four years our production has exceeded 10 billion feet, and it is almost as great in the three prior years.

There is no end in sight for the present high volume of demand for our products. Ours is a growing country with an increase in population so rapid as to tax the existing housing, school, church and commercial and industrial facilities.

Huge School Needs

One million new homes a year, a pace we have maintained for five straight years, is not adequate to meet the requirements of new families made each year, of obsolescence, loss from floods, fires and other causes.

The 50,000 school classrooms built last year made only a small dent in the backed-up needs. School officials estimate 345,000 new classrooms will have to be built immediately to care for present needs and prevent a pile-up in the years in the near future. Over 60% of the 900,000 classrooms now in use are over-crowded. At least 9,000,000 of our 28,000,000 students in public schools are housed in inadequate classrooms far beyond health and safety factors.

New population will require more churches, more commercial buildings, more public works projects. Industrial expansion and new products and new industries will require more facilities.

The "Fight for Life"

Since Douglas fir and west coast hemlock are the nation's prime structural species, the need for these woods will be great.

But, the competition from other materials for this vast construction business is also greater than ever. Substitutes by the scores, of all types of materials, are being offered the construction industry.

More than ever, lumber must fight for its life, if it is to maintain its premier position as the greatest of all building materials.

We believe we have proven through the medium of the West Coast Lumbermen's Association amazingly successful national advertising and promotion programs in the past eight years that interest can be aroused in our products and our species. The high volume of lumber sold from this area, and our expansion into the deep south since the war means that our species can be bought at every crossroads in America. More people know about West Coast woods today than ever before.

Ring More Doorbells

But, we still have to sell the public that our lumber is best for the purpose. We must get out and sell. We must ring more doorbells. That goes for manufacturers as well as distributors and retailers. We must get more miles for every gallon of sweat.

There are encouraging signs that this will be done. Our industry is more promotion-minded than ever before. We are willing and able to put more dollars into national promotion. We are developing new patterns, new styles and new lumber products to meet competition. We are willing to use every new selling tool, like television, more motion pictures, more full-color national advertising and more and better lumber literature.

The opportunity for continued good business is before us. Whether we continue to get our full share for this region to help maintain the payrolls and economy of the Northwest depends upon us as individuals. Only so much can be accomplished by group action and group financing of national promotion.

Production of Western Larch Lumber in U.S.

(Thousands of bd. ft.)

1899— 42,394	1944—246,110
1905— 76,173	1945—190,722
1910—255,186	1946—264,309
1915—263,329	1947—292,049*
1920—338,707	1948—217,509
1925—287,559	1949—152,912**
1930—168,549	1950—245,516***
1935— 94,848	1951—293,815***
1940—128,889	1952—Not avail-
1941—146,294	able
1942—197,784	
1943—226,483	

Note: Majority of production in Montana and Idaho, with some in Oregon and Washington and a very minute cut in Wyoming.

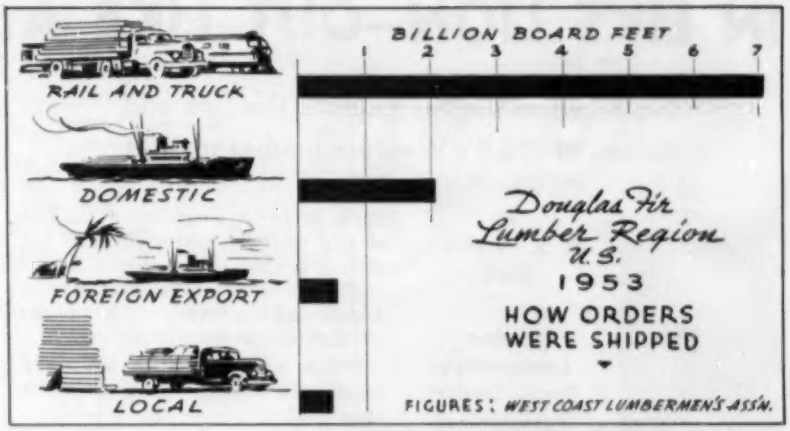
*Northern Rocky Mountain area only.
**Bureau of Census figure, represents total U. S. larch.

***Northern Rocky Mountain & Pacific Northwest regions only.

Source: Forest Service; Bureau of Census.

B. C. Loggers

The British Columbia Loggers' Association was organized in 1907 and has continuously represented the logging industry on the coast of British Columbia since that time.



Value and Volume of National Forest Timber Cut, 1905-1953

	1905	1910	1920	1930	1940	1945	1950	1951	1952	1953
Volume of Timber Cut (million ft., b.m.)	63	379	805	1,653	1,740	3,145	3,502	4,688	4,419	5,160*
Value of Timber Cut ($1000)	86	906	1,764	4,790	4,807	13,016	30,714	47,816	59,341	70,616*

*Fiscal year 1953.
Source: U.S. Government.

Production of Douglas Fir Lumber in U. S. & Canada

(Thousands of board feet)

	Total U. S.	Oregon	Washington	California	Idaho	Montana	South Rocky Mountain Region	British Columbia
1869	196,000	54,000	107,000	30,000	.....	5,000	.....	.....
1879	289,000	130,000	124,000	25,000	1,000	9,000	.....	.....
1889	1,206,000	301,000	847,000	25,000	3,000	30,000	.....	.....
1899	1,739,182	501,327	1,152,672	18,264	.....	.....	80	.....
1905	4,319,479	1,076,695	3,125,325	100,816	10,177	6,132	334	.....
1910	5,203,644	1,714,462	3,259,546	103,169	62,793	53,070	10,604	.....
1915	4,121,897	1,119,395	2,754,179	117,951	76,283	41,464	12,625	.....
1920	6,956,683	2,347,368	4,275,017	161,632	105,786	55,670	11,210	.....
1925	8,154,373	2,792,432	4,912,204	206,325	139,501	74,003	29,908	.....
1930	6,453,043	2,359,062	3,826,066	133,110	61,031	45,585	28,189	.....
1935	4,772,449	1,855,141	2,717,390	95,508	42,376	34,039	27,995	.....
1940	7,121,236	3,251,187	3,509,266	196,137	71,978	62,336	30,332	1,691,986
1941	8,531,845	4,069,319	3,973,881	248,488	129,176	86,518	24,460	1,525,479
1942	8,549,755	4,247,204	3,696,903	290,216	177,501	96,663	41,268	1,534,419
1943	7,950,928	4,266,487	3,091,452	328,395	157,136	75,953	31,505	1,233,953
1944	7,863,952	4,324,795	2,887,981	365,787	155,225	89,720	40,444	1,140,691
1945	6,237,312	3,501,773	2,128,029	372,885	135,592	67,532	31,501	.....
1946	7,639,635	4,599,106	2,241,463	507,066	145,295	99,573	47,132	1,128,325
1947	9,043,403	5,436,722	2,501,414	768,866	187,062**	114,147	35,192	1,410,170
1948	9,793,737	5,977,447	2,430,361	952,529	302,751**	210,896	42,360**	1,514,118
1949	9,074,424	5,909,695**	2,310,855**	1,179,641	288,420**	311,704**	32,302*	1,593,556
1950	9,983,988	6,512,669**	2,287,324**	1,202,798	379,943**	342,884**	57,919**	1,738,101
1951	10,056,324	6,940,843**	2,344,887**	1,610,959	342,103**	126,379	38,754**	1,717,739
1952	10,539,700	6,905,957**	2,042,916**	1,718,300	345,409**	305,989**	41,785**	1,605,896
1953	†10,000,000			†1,600,000		412,660**		1,700,000

†Unofficial—estimate only.
*Includes Western Larch in Eastern Oregon.
**Includes Larch
Source: Forest Service; Bureau of Census; Western Pine Association.

LUMBER IN LIKE LION—OUT LIKE A LAMB

Well-known expert depicts the ups and downs of 1953's Western lumber market

By
H. J. "HERB" COX

President, Lumbermen's Buying Service (Publishers of Industry Market Reports)

In keeping with the proverbial month of March, the West Coast and Western Pine regions of the Lumber Industry entered 1953 "like a Lion" and departed "like a Lamb!"

All western softwoods started the year on a strong market. Federal Government controls were still in effect, but with the advent of the Eisenhower Administration, price controls on forest products were destined for quick abolishment. Gloom permeated the halls and cubicles of the Office of Price Stabilization and in order to keep busy until death struck, the vast personnel were assigned to the task of writing for posterity a historical record of the Office of Price Administration at taxpayer expense.

The innumerable Green mills (large and small) produce around 50 percent of the total lumber production in the Douglas Fir regions of Western Oregon and Washington. Owing to the physical and or financial conditions surrounding many of this type producers, the Green lumber mills are highly susceptible to quick market changes.

Average sales returns are not available but the following figures are representative of the net sales prices of the average so-called "smaller Green fir mills" on the last day of each calendar month for 2x4 R/L #2 (25%) and Better Green S4S. These prices reflect market trends and are several dollars higher than the average sales return.

	1953	1952	1951
January	$65	$72	$66
February	65	69	77
March	65	71	75
April	65	76	78
May	61	69	74
June	61	72	70
July	58	72	69
August	55	71	70
September	55	71	74
October	54	66	72
November	54	61	70
December	56	63	68

Prices were lower and sales and production volume were slightly less than 1952.

Although prices were lower than the preceding year, the volume of 1953 sales by the mixed car fir mills were on a par with 1952. Demand for pattern stock (Clear Shed items) was consistently strong throughout the year and price fluctuations were slight. However, the demand for Common grades was spotty and prices were progressively downward. Starting on January 1st, sales prices for 2x4 R/L #2 (25%) and Better KD Douglas fir ranged from $80 to $83 mill for shipment in mixed cars, (other widths at customary price differentials) and by the end of the year, this 2x4 item was selling from $70 to $73.

Offshore Market

Until well past mid-year, the offshore business was unusually quiet and new business was limited to a daily trickle. The latter part of the year brought a substantial volume of new business, particularly for export to South Africa and Australia, and at attractive prices ranging from $59 to $65 for Commons, $62 to $68 for Merch and $65 to $71 for Select Merch.

The Atlantic Coast cargo market held a reasonably steady demand position until a slowdown in buying by the United Kingdom diverted a heavy volume of Canadian production to the American Atlantic Coast. However, the late year increase in purchasing for the United Kingdom, together with improvement in offshore markets, shifted a large portion of Canadian production to the Export trade. January sales in the Atlantic Coast markets brought the West Coast American cargo mills around $70 f.a.s. for round schedules of 2" #2 & Better Dimension. April through July, $66. September, $55. December, $62.

The California cargo market was spasmodic with Random Width, Random Length 2" #2 & Better Green Fir Dimension around $68 to $70 in January through April. May, $66 to $67. June, $62 to $65. July through October, $57 to $58. November, $59 to $60. December, $61 to $62.

Western Pine Steady

Unlike the Douglas Fir region, the reaction of Western Pine prices to abrupt market changes is much slower and prices hold more steady.

Selects and Moulding stock held a reasonably steady market position and very few price changes occurred during the year. Except for traditional marketing periods for seasonal airdried production, the demand and price fluctuations of Pine Shop were inconsequential.

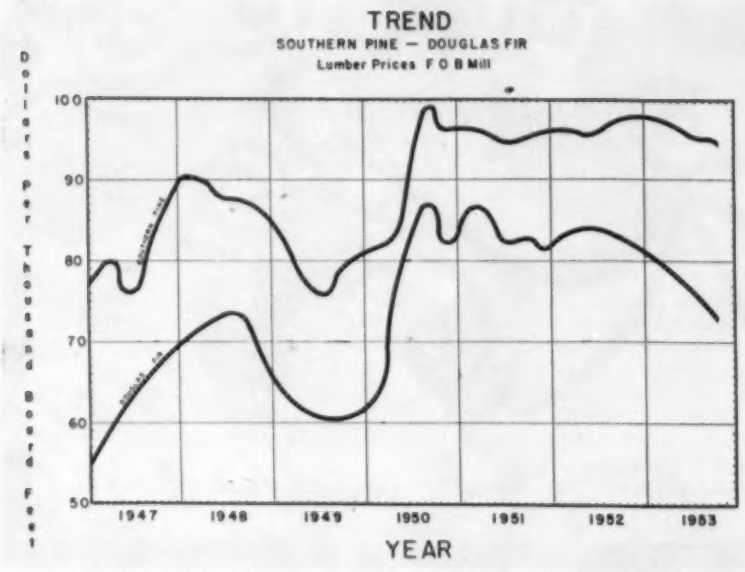
#2 and Better Ponderosa Common started out at $120 to $130 for large mill stock, largely as a sales leader in mixed car shipments, and except for a few slight disturbances, these prices prevailed throughout the year. Smaller mill sales held around $5 to $10 under large mill prices.

The #3 and #4 Pine Common market was more or less unstable. The sale of seasonal production temporarily influenced the market for Kilndried stock. Large mill sales of #3 KD mostly in mixed cars, held around $78 to $85 from January to June. July brought some weakness in demand and large mill sales moved to around $75 to 78. By September, the market was still draggy but prices held during the next three months and, at the end of the year, #3 was selling around $70 to $75. During the year, small mill stock sold from $5 to $10 under large mill prices. #4 Common Pine started out at prices around $67 to $68 for large mill stock and, by the end of the year, $54 to $57 was the prevailing price. Small mill stock was selling at $60 in January and $50 was tops in December.

White Fir Production Up

Kilndried White Fir went through a year of jumpy demand together with a slow and steady decline in prices. The pressure of seasonal production of Airdried stock was pronounced. January sales of 2x4 R/L #2 and Better KD started at $72 to $73 and, by the end of the year, this item was selling for $62 to $63.

There was a definite trend toward more production of White Fir. Many mills were concentrating on this spe-



Graph drawn by LeMieux Brothers, Inc., New Orleans 12, La., consulting foresters, from figures compiled by the Bureau of Labor Statistics.

cies in preference to Pine and these same large mills are now cutting heavily from log decks of mixed Pine and White Fir. Consequently, a heavy volume of Kilndried stock may soon reach the market in the absence of substantial Retail Yard buying, supply and demand could become radically unbalanced.

Engelmann Spruce is the most popular item in the realm of Pine. As the result of extensive Nation-wide sales promotion, the consumer use of this species is rapidly increasing, and Engelmann Spruce is becoming highly competitive in the long-established markets for other softwood species. Western White Spruce runs a close second to Engelmann. Eastern Canada is the large source of supply and the production of Western Spruce has been more or less handicapped by labor disputes during the past year.

White Pine, Cedar and Redwood

Idaho White Pine reigns supreme and the high volume of demand and limited production reduces sales problems to a minimum.

The production of Western Red Cedar and Redwood lumber is limited in volume as well as in the number of producers. The market closely follows that of Fir and Pine but prices are less affected by seasonal demand.

Sitka Spruce production along the Oregon, Washington and British Columbia Coast is limited to a few operations, mostly old-time producers with a long-established customer clientele. Inasmuch as they produce the bulk of this specie, demand is constantly far in excess of supply. The production of genuine Sitka Spruce is gradually decreasing.

1954 a Good Year

Generally, millmen, as well as their customers, feel that 1954 will be a good lumber year regardless of the possibility of a slightly reduced volume. Probably, current prices will prevail for some time but, opinion at the mill level, indicate that they will go no lower and that average returns for 1954 will be as good or better than for 1953.

This is a year of Nation-wide Congressional elections. Votes are of paramount importance and the party in power will strain to the utmost.

It is very evident that the "Gravy Train" has stopped running. This year may bring casualties, and from now on, it is apparent that Selling instead of Production will be the controlling factor in the Forest Products Industry.

Cost History of the Douglas Fir Region Lumber Industry 1926 – 1952

Year	Production Million Feet	Average Cost of Production Per M Feet	Cost Index (Per Cent)	Number of Sawmills Operating
1926	10,285	$21.51	100.0	631
1927	9,902	21.16	98.4	580
1928	10,109	20.19	93.9	651
1929	10,290	21.15	98.3	883
1930	7,681	20.49	95.3	662
1931	5,400	16.02	74.5	535
1932	3,153	15.50	76.7	441
1933	4,348	16.20	75.3	606
1934	4,396	20.00	93.0	719
1935	5,113	19.28	89.6	670
1936	6,848	19.61	91.2	772
1937	7,067	21.72	101.0	818
1938	5,510	20.64	96.0	663
1939	6,945	19.52	90.7	699
1940	7,589	20.67	96.1	714
1941	9,176	24.37	111.3	906
1942	9,058	28.72	133.5	1,044
1943	8,669	31.88	148.2	1,012
1944	8,494	33.34	155.0	1,010
1945	6,586	35.35	164.3	986
1946	7,835	37.22	173.0	1,603
1947	8,962	47.50	220.8	1,888
1948	9,405	55.73	259.1	1,675
1949	9,135	52.70	245.0	1,242
1950	10,108	55.66	258.8	1,186
1951	10,416	63.28	294.2	1,367
1952	10,154	66.96	311.3	993

(Source: West Coast Lumbermen's Association; compiled from statistics compiled by W.C.L.A., Bureau of Census and State of Washington)

Production of Western Cedar Lumber in U.S.

(Thousands of bd. ft.)

	Incense Cedar	Port[1] Orford Cedar	Western[2] Red Cedar
1941	40,392	72,706	181,230
1942	40,696	59,574	162,436
1943	31,722	59,397	152,600
1944	45,251	34,588	175,567
1945	52,524	37,269	187,803
1946	71,361	30,660	180,462
1947	79,543	16,607	218,173
1948	N.A.	N.A.	279,478[3]
1949	35,317	7,469	221,346
1950	51,377	N.A.	254,000
1951	60,490	9,203	229,269
1952	80,800	N.A.	244,800

1 Nearly all Oregon—some California.
2 Mostly Washington but with substantial amount in Oregon and Idaho.
3 All cedars.
*Includes Alaska yellow cedar.
Source: Forest Service; Bureau of Census.

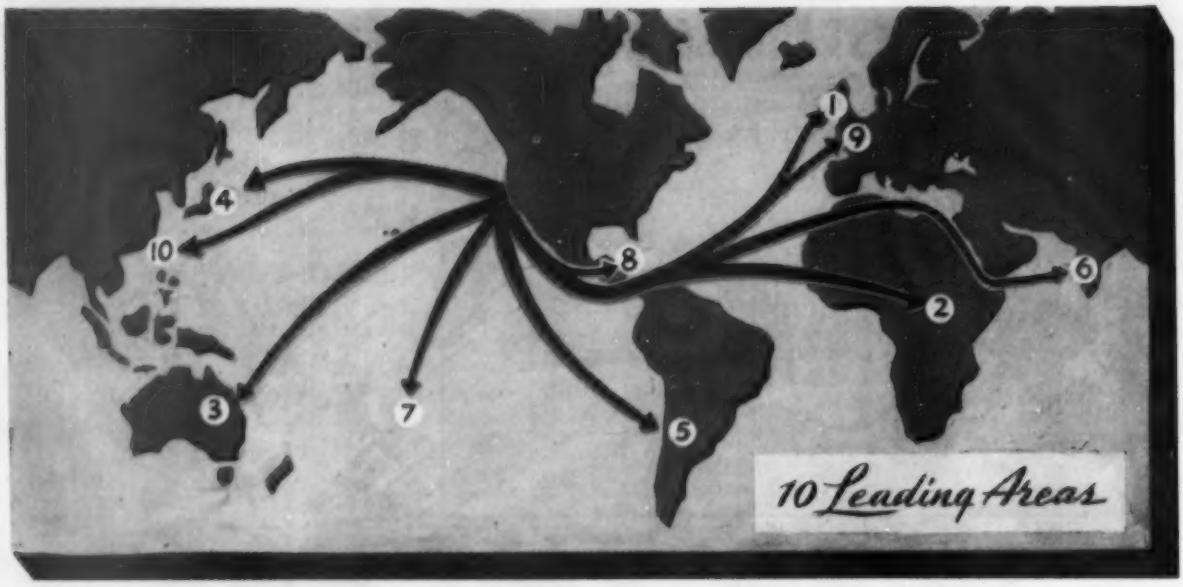
Production of Western Hemlock Lumber in U.S.

(Thousands of bd. ft.)

1899	549	1943	715,883
1905	95,182	1944	729,990
1910	174,052	1945	610,335
1915	374,415	1946	655,827
1920	584,744	1947	1,243,574
1925	1,234,154	1948	783,434
1930	1,065,506	1949	694,679
1935	250,840	1950	925,801
1940	301,537	1951	1,484,306*
1941	434,908	1952	1,070,800
1942	545,815		

Note: Figures are for Western U. S., largely Oregon and Washington but with small amounts from Rocky Mountain areas.
*Includes Eastern hemlock for that year.
Source: Forest Service; Bureau of Census.

LUMBER



Foreign and Domestic Waterborne Shipments of Lumber From U.S. and B.C. Pacific Coast

Summary By Districts

District	Export	Domestic	Total
British Columbia	818,679,653	572,984,553	1,391,664,206
Puget Sound	46,147,526	253,165,332	299,312,858
Grays-Willapa Harbor	93,782,771	221,992,381	315,775,152
Columbia River	122,508,470	458,014,171	580,522,641
Coos Bay	218,646,161	596,458,216	815,104,377
California	27,030,164	66,726,954	93,757,118
Southern Oregon	6,632,873	22,186	6,655,059
	1,333,427,618	2,169,363,793	3,502,791,411

COMPARISON OF LAST TWO YEARS

	1963	1952	
British Columbia ..	1,391,664,206	1,148,052,422	21.2%
Washington	802,930,417	703,860,563	14.1%
Oregon	1,214,439,670	1,238,454,762	2.0%*
California	93,757,118	45,781,595	104.8%
TOTAL	3,502,791,411	3,136,149,342	11.7%

*Decrease

Source: Pacific Lumber Inspection Bureau.

TOTAL—ALL MARKETS	3,502,791,411
United Kingdom	545,862,737
Africa	165,954,902
Australia	134,543,137
Japan	75,791,902
South America (West Coast)	34,388,659
India	18,679,271
South Sea Islands	16,254,341
West Indies	12,296,912
Belgium	12,161,494
China, Hong Kong, Formosa	11,338,463
Holland	6,659,610
New Zealand	6,169,281
France	5,460,103
Korea	4,073,370
Germany	3,714,349
Italy	2,441,594
Total for the Next 10 Markets	10,471,826
Unclassified	267,165,667
TOTAL—FOREIGN	1,333,427,618
Alaska	16,676,706
Atlantic Coast	1,593,834,190
California	462,865,733
Eastern Canada	6,708,460
Hawaiian Islands	50,156,707
Panama Canal Zone	636,757
Puerto Rico	38,485,240
Unclassified	... ...
TOTAL DOMESTIC	2,169,363,793
TOTAL MARKETS—1952	3,136,149,342
TOTAL FOREIGN—1952	1,344,650,091
TOTAL DOMESTIC—1952	1,791,499,251

Production in Alaska

Year	Number of mills reporting	Lumber Sawed (M Feet, B. M.) Total	Spruce	Hemlock	Cedar	All Other	Shingles (squares)
1899	10	6,571	6,056	15	[1]	[2]500	....
1904	6	7,974	7,933	....	[1]	[2]41	1,158
1919	22	21,673	21,182	491	....	....	....
1925	28	40,857	35,718	2,938	[1]	[2]2,201	3,295
1929	19	30,393	21,850	8,205	[1]	[2]338	2,943
1935	20	23 490	14,769	8,069	658	3	2,182
1939	24	25,885	18,162	6,071	1,595	57	2,471
1941	27	36,547	28,064	7,515	933	35	3,718
1945	35	59,056	51.623	6,258	1,175	....	565
1946	42	57,506	47,487	8,710	1,296	13	2,432
1947	40	80,480	69,105	9.872	1,497	6	[3]
1949	09	48,541	39,024	8,647	[4]870	....	[5]

[1] Included in "All Others".
[2] Includes figures for cedar lumber.
[3] Data not published to avoid disclosing operations of individual establishments.
[4] Includes figures for birch.
[5] Not available.
Source: Bureau of Census.

Timber Cut in F. S. Region 10 (Alaska)[1]

(Thousands of bd. ft.—Calendar Year Basis)

	Tangass Nat'l Forest[2] Volume	Value	Per M	Chugach Nat'l Forest[3] Volume	Value	Per M	Volume	Value	Per M
1949	49,220	$105,294	$2.14	5,910	$ 8,762	$1.48	55,130	$114,056	$2.07
1950	54,537	120,486	2.21	5,424	5,705	1.05	55,961	126.191	2.10
1951	52,894	147,699	2.79	5,803	7,450	1.28	58,697	155,149	2.64
1952	63,357	204,909	3.23	2,159	7,746	3.59	65,516	212,655	3.24
1953	59,196	201,642	3.41	4,665	16,368	3.51	63,861	218,010	3.41
5-yr. average	55,841	156,006	2.79	4,792	9,206	1.92	60,633	165,212	2.72

[1] Excludes Interior Department administered lands, which provide timber for a number of small mills.
[2] Southeastern Alaska.
[3] Prince William Sound and Kenai Peninsula areas.
Source: Regional Forester, U.S. Forest Service, Juneau, Alaska.

WESTERN PINE

"Pine Region Has Never Been So Healthy"

By
U. R.
ARMSTRONG
President,
Western Pine
Association

The Western Pine industry has some tremendous problems facing it in this new era of a tightening market. But I cannot but feel optimistic about the future. The accomplishments of our past have readied and prepared our industry for what may lie ahead. We have never been so healthy.

The most important factor facing us in our new economy is competion —something almost forgotten for the better part of a generation. However, the Western Pine industry has fashioned over the past 30 years some magnificent tools with which to meet competition head on. With them, I am confident we will survive and thrive. Foremost among these tools are promotion and research.

We believe our Western Pine products are the best of their kind available anywhere. So we have been telling our customers and the public about them since 1924. This year alone almost three dozen magazines —consumer, architectural, contractor and trade—will publish nearly 100 million impressions of Western Pine space advertising. More than a million pieces of promotional literature are expected to be distributed to potential customers and users during the same period.

Production of Ponderosa Pine Lumber in U.S.

(Thousands of bd. ft.)

1869— 285,000	1942—4,030,180
1879— 339,000	1943—3,871,855
1889— 695,000	1944—3,768,349
1899— 945,662	1945—3,056,281
1904—1,290,626	1946—3,630,315
1905— 988.542	1947—3,839,058
1910—1,562,106	1948—4,224,931
1915—1,252,244	1949—3,714,698
1920—2,780,898	1950—3,864,648
1952—3,664,145	1951—3,613,876
1930—2,594,454	1925—3,127,208
1935—2,527,553	1953— . . . . .
1940—3,612,945	
1941—4,253,212	

Source: Forest Service; Bureau of Census; and Western Pine Association (1952 cut).

"Fantastic" Wood Use Ahead

The cumulative effect of this promotional effort over three decades has placed the Western Pines in an excellent position to face the future.

Research in the wood industry was pioneered by the Western Pine Association, and that is the second important tool on which we must depend to meet competition. A constant drive is on here to improve our lumber products, and to develop further uses for them. To do this we have an excellent research laboratory in Portland, Oregon, where past projects have brought about revolutions in some segments of the wood industry, and where ideas for the future range into almost fantastic fields.

Research, too, together with heavy additional investments, have been responsible for the wonderful equipment in the mills and in the woods. In the past 10 years our mills have generally become highly efficient, modern lumber factories producing a better product than ever before. This is one of the accomplishments of the past which has solidly entrenched our industry for any battle against competitive materials or ideas.

Leading the Bug Fight

Every industry must protect its raw materials. The forests are our natural resource, and it is there that the second of our big problems faces us—the threat of forest insect and disease losses. And though billions of board feet of timber are lost to bugs and diseases annually, we are aware of our responsibilities in this field and are among the leaders in the entire forest industry to combat it. Here again scientific developments are on our side.

In my own state of Idaho in the 1920's a pine butterfly infestation ruined Ponderosa Pine stands to the extent that some areas recorded losses of as much as 30 percent. At that time the finest foresters available were able only to shrug their shoulders and admit they knew nothing which could be done to stop such destruction.

Today we can handle such an infestation with little difficulty with our modern airplanes and our highly developed chemical insecticides. The big trouble now appears to be in locating such outbreaks before they get underway before damage becomes severe.

In the Western Pine Region we have established a brand new set of committees for just this purpose. They are the forest pest control action committees, each organized on a subregional, local level. These groups are designed for early detection of insect infestation and disease outbreaks in their areas, and can evaluate the need for action. The committees are made up of men from government and state forest agencies, industry, landowners, farmers, ranchers and other interested persons.

Naturally we have a myriad of other problems in our industry, but these two—competition and insects—are the most pressing.

Volumewise, we expect to do a good business this year. Though housing starts are expected to drop as much as seven percent, an increase in the do-it-yourself market of perhaps 10 per cent is also expected. The Western Pines are ideally suited for just such a market.

Beyond this year my optimism still stands. The Western Pine industry, firmly entrenched upon its present foundation, will by the sweated brow and forward thinking maintain its position as a leader in the world's forest industries.

Production of Lodgepole Pine Lumber in U.S.

(Thousands of bd. ft.)

1910—26,634	1946—86,220
1915—22,672	1947—99,600
1920—30,136	1948—95,496
1925—24,979	1949—98,275
1930—30,401	1950—Not available
1935—17,691	
1940—47,063	1951—Not available
1941—72,740	
1942—66,358	1952—Not available
1943—68,053	
1944—72,301	
1945—65,358	

Source: Forest Service; Bureau of Census.

Production of Engelmann Spruce Lumber in U.S.

(Thousands of bd. ft.)

1940—62,008	1947—101,737
1941—62,581	1948—109,822
1942—77,829	1949— 85,865
1943—69,048	1950—134,719
1944—91,699	1951—154,450
1945—70,591	1952—278,700*
1946—93,173	

*Includes Blue spruce.
Source: Forest Service; Bureau of Census.

WESTERN PINE

Lumber Production—Western Pine Region By States, 1930-1952

	1930	1940	1945	1951	1952
	(Thousands of board feet)				
Arizona	95,497	128,776	157,984	278,010	275,608
California and Nevada	1,513,938	1,954,231	2,260,399	2,650,226	2,719,573
Colorado	54,564	79,183	87,236	150,741	144,931
Idaho	839,759	773,293	780,315	1,009,671	1,083,429
Montana	296,970	325,315	341,623	547,541	593,500
New Mexico	142,885	112,786	98,927	129,987	107,182
Oregon (East)	989,569	1,673,789	1,193,352	1,514,058	*1,627,238
Oregon (Jackson and Josephine Counties)	14,000†	20,000†	48,331‡	152,100	.....
South Dakota	59,464	40,250	44,729	28,255	35,451
Utah	6,306	15,615	27,987	43,995	44,708
Washington (East)	534,427	570,885	483,343	683,205	707,931
Wyoming	25,131	57,223	54,068	71,890	74,556
TOTAL	4,572,510	5,751,346	5,578,294	7,259,679	7,414,107

† Unofficial—a pro-rated estimate based on figures of other years.
* Includes Jackson and Josephine counties.
Source: Forest Service, Bureau of Census, Western Pine Association
‡ Includes sugar pine.

Production of Western White Pine Lumber, U.S.

(Thousands of bd. ft.)

1869— 36,000
1879— 27,000
1889— 46,000
1899— 11,428
1905—115,678
1910—248,435
1915—419,792
1920—338,193
1925—490,299
1930—545,129
1935—471,130
1940—547,718
1941—500,201
1942—395,363
1943—350,517
1944—306,636
1945—246,128
1946—253,292
1947—251,907
1948—272,097
1949—298,071
1950—341,792
1951—300,000*
1952—257,600

*Annual estimate by THE LUMBERMAN on basis of 3 quarters information only.

Source: Forest Service; Bureau of Census.

Production of White Fir Lumber in U.S.

(Thousands of bd. ft.)

1925—336,887
1930—207,494
1935—107,453
1940—120,556
1941—209,751
1942—274,295
1943—403,175
1944— 492,432*
1945— 499,266
1946— 684,010
1947— 672,870
1948— 764,622
1949— 759,171
1950—1,113,951
1951—1,181,171
1952—1,639,300

*Includes the other true firs.
Source: Forest Service; Bureau of Census.

Production of Yellow Poplar Lumber in U.S.

(Thousands of bd. ft.)

1899—1,118,371
1910— 734,926
1920— 270,407
1930— 257,803
1935— 181,703
1940— 376,037
1941— 433,235
1942— 542,917
1943— 589,344
1944— 640,779
1945— 578,463
1946— 826,879
1947— 635,521
1948—Not available
1949— 555,719
1950— 832,983
1951— 749,375
1952—Not available

Source: Forest Service; Bureau of Census.

Production of Sugar Pine Lumber in U.S.

(Thousands of bd. ft.)

1899— 53,558
1905—123,085
1910—103,165
1915—115,109
1920—145,906
1925—306,992
1930—205,159
1935—192,829
1940—363,041
1941—369,855
1942—338,386
1943—277,886
1944—317,799
1945—228,103
1946—343,978
1947—343,173
1948—315,010
1949—379,801
1950—425,444
1951—405,660
1952—348,031

Note: Production in states of Oregon and California only, except for 300,000 bd. ft. produced in Washington in 1944 and attributed to Oregon for that year.

Source: Forest Service; Bureau of Census.

Norwegian Lumber

Norway has temporarily stopped lumber exports while ascertaining whether mill supplies are adequate to meet domestic demands. In 1953, licenses were issued for the export of 45,000 standards.

Volume and Value of Timber Cut from Lands of the Department of Interior

(Includes Bureau of Land Management, Bureau of Indian Affairs, Fish & Wildlife Service, Bureau of Reclamation and the National Park Service. In the case of the latter, the data reflect salvage of either burned or blown down timber.)

	M. Bd. Ft.	*Value*
1940	689,905	$ 1,925,825
1941	849,128	2,272,830
1942	970,863	2,674,692
1943	992,533	3,031,556
1944	902,634	3,368,918
1945	1,048,682	4,294,812
1946	909,131	3,631,169
1947	1,095,305	5,000,549
1948	1,247,683	6,861,057
1949	1,152,655	10,200,539
1950	1,116,009	10,557,521
1951	1,338,722	14,639,221
1952	1,272,772	18,431,724

Lumber Production, Western Pine Region, By States and Species, 1952† Thousands of Feet, Board Measure

	Ponderosa Pine	Idaho White Pine	Sugar Pine	Douglas Fir & Larch	White Fir	Engelmann Spruce	Western Red Cedar	Incense Cedar	Lodgepole Pine	Other Species	Total
Arizona	261,037	...	.....	9,954	.....	4,617	...	...	...	...	275,608
California & Nevada	1,162,703	436	312,110	523,394	630,648	.....	...	80,985	5	9,292	2,719,573
Colorado	37,682	...	.....	1,739	3,188	46,813	...	...	55,509	...	144,931
Idaho	238,277	208,440	.....	345,409	196,878	51,079	30,263	...	13,083	...	1,083,429
Montana	199,179	8,027	.....	305,989	401	77,638	186	...	2,080	...	593,500
New Mexico	65,703	.....	.....	25,852	9,968	5,659	...	...	...	...	107,182
Oregon	1,287,148*	4,148*	35,921*	206,413	87,927	40	732	1,913	2,996	...	1,627,238
South Dakota	35,451	.....	.....	.....	.....	.....	...	...	...	...	35,451
Utah	17,172	.....	.....	4,216	1,551	11,812	...	...	9,957	...	44,708
Washington	351,622	31,508	.....	286,329	25,422	4,138	3,510	...	3,929	1,473	707,931
Wyoming	8,171	.....	.....	24	.....	4,555	...	...	61,806	...	74,556
Total	3,664,145	252,559	348,031	1,709,319	955,983	206,351	34,691	82,898	149,365	10,765	7,414,107

* Includes Jackson and Josephine Counties. (Source: Western Pine Association)
† Latest year for which complete figures are available.

No Pessimism in the California Redwood Industry

By
EARL B.
BIRMINGHAM
President,
California
Redwood
Association

California redwood is a specialty wood and is produced in relatively small quantities. Never has the production of redwood accounted for more than three per cent of the total softwood production in the United States. When we speak of trends in the redwood business, it does not necessarily follow, therefore, that these trends closely parallel the rest of the industry.

At the outset, it might be well to say that as far as the major producers of redwood are concerned, there is no pessimism as we face 1954. The redwood industry remains optimistic and expects production and sales to be at least average when compared with other post-war years.

Definitely Limited in Production

Among our biggest problems is that of maintaining sufficient production to meet the demand, particularly for the upper grades. There is certainly little desire on the part of industry to increase production if done at the expense of future supply. We are fortunate in having a large reserve of virgin timber, but this supply must last long enough to assure that young growth timber will reach maturity before harvest.

Since production cannot be materially increased, the problem becomes that of attaining better distribution of existing supplies. In the past, most of the redwood produced was consumed in California. During recent years, the distribution picture has changed rather radically. At the present time, approximately 50 per cent of the redwood produced is shipped out of the state. This percentage includes mostly upper grades and is increasing.

This change in the distribution picture has come about through aggressive promotion on the part of the California Redwood Association and concentrated sales effort on the part of the major companies. The promotion work has included intensive contact with not only wholesale and retail dealers but with specifiers as well. The association maintains men in the field most of the year to do this valuable job. Production of literature aimed at the numerous specific uses of redwood has been increased. Redwood publicity continues at a high rate in the nation's leading shelter magazines. The results of this program speak for themselves.

Industrial Uses Foreseen

Research has played an important part in the efforts of the industry to improve constantly the quality of the product and to maintain high standards of uniformity. Improved methods of air seasoning and kiln drying are cases in point. The certified dry program has had wide acceptance where uniform dryness of redwood is an important factor in use. For several years now, the association has been testing exterior finishes for durability. Out of the 131 finish systems tested to date, 20 have passed the minimum tests of durability adopted by the association.

Promotion and research are continuing programs. This year, the industry plans to intensify these efforts and to open new markets for redwood, particularly in the industrial field. These activities have a strong impact on the distribution of redwood products. As a result, the industry expects that the east and middle west will receive a larger share of this production to do the jobs that demand the special qualities of redwood.

Production of Redwood Lumber in United States

NOTE: Production of lumber shown here is entirely in the state of California except for years 1925, 1930, 1940, 1941 and 1945, whose production totals include very small percentages of out-of-state production.

(Thousands of bd. ft.)

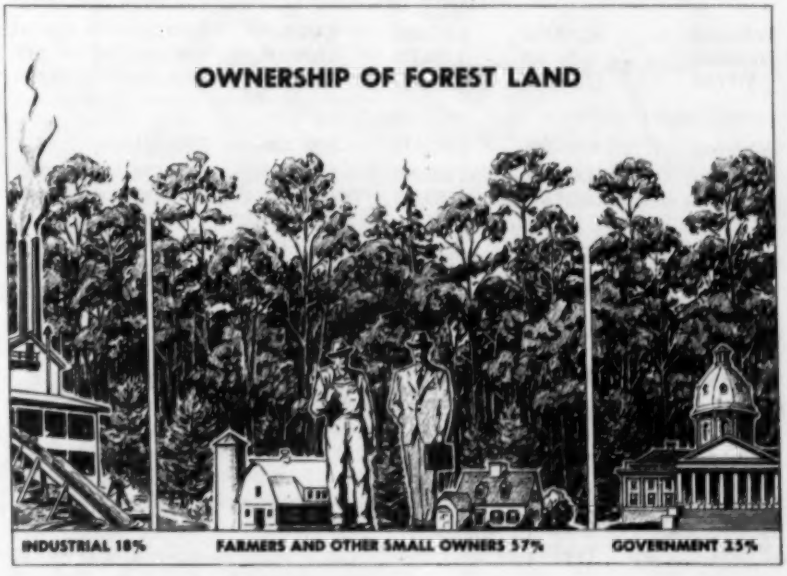
1899—360,167	1944—461,937
1905—411,689	1945—443,807
1910—543,493	1946—243,310
1915—418,824	1947—529,921
1920—476,003	1948—793,250
1925—510,639	1949—744,120
1930—403,072	1950—875,453
1935—328,862	1951—957,117
1940—388,845	1952—299,600
1941—455,536	1953— . . . . .
1942—461,552	
1943—460,829	

Source: Forest Service; Bureau of Census.

Nevada Records Steady Rise in Wood Products

The lumber and wood products industry in the state of Nevada is concentrated almost entirely in Washoe county, of which Reno is the county seat. While the forest industries of that state are relatively small when compared with other states, the processing of wood has shown a growth there in the post-war years, with large percentage increases both in the number of workers and the industrial payroll.

For the 12-month period ending June 30, 1953, the average number of workers employed in lumber and wood products was 568. The payroll for this same period was nearly $2,500,000.



SOUTH

Lumber Production in the South

		12 Southern States	Alabama	Arkansas	Florida	1947* Georgia	Louisiana	Mississippi
		(Thousand board feet)						
Softwoods—	Sou. yell. pine	9,271,063	1,253,355	782,262	417,038	1,403,687	719,103	872,935
	Cypress	235,302	3,343	19,933	68,247	8,480	37,897	15,070
	Other	92,657	2,053	508	483	2,426	300	29
	Total	9,599,022	1,258,751	802,703	485,768	1,414,593	757,300	888,034
Hardwoods—	Oak	1,837,730	191,313	298,040	6,910	70,272	196,299	207,299
	Gum, Red	773,676	159,902	112,231	17,635	73,467	120,408	107,934
	Gum, Black & Tupelo	389,587	46,797	12,803	5,762	28,720	83,495	66,788
	Yellow poplar	458,499	101,001	1,122	5,003	84,633	4,401	19,612
	Other	580,993	37,197	58,416	12,501	15,729	107,477	107,478
	Total	4,040,485	536,210	482,612	47,811	272,821	512,080	509,111
TOTAL ALL SPECIES		13,639,507	1,794,961	1,285,315	533,579	1,687,414	1,269,380	1,397,145

		North Carolina	Oklahoma	South Carolina	Tennessee	Texas	Virginia
Softwoods —	Sou. yell. pine	1,118,053	53,636	654,735	175,080	1,117,674	703,505
	Cypress	25,778	....	28,973	13,000	7,039	7,542
	Other	29,731	40	1,956	26,049	272	28,810
	Total	1,173,562	53,676	685,664	214,129	1,124,985	739,857
Hardwoods—	Oak	176,078	14,486	48,144	255,091	128,088	245,710
	Gum, Red	34,260	2,023	50,362	20,928	54,113	20,413
	Gum, Black & Tupelo	46,388	887	50,893	12,062	15,650	19,342
	Yellow poplar	70,449	20	19,808	52,575	....	99,875
	Other	38,919	11,701	16,143	110,652	23,910	40,870
	Total	366,094	29,117	185,350	451,308	221,761	426,210
TOTAL ALL SPECIES		1,539,656	82,793	871,014	665,437	1,346,746	1,166,067

*1947 is latest year for which production statistics broken down by states are available.
Source: Bureau of Census.

	12 Southern States	South Atlantic [1]	East Gulf [2]	Lower Mississippi [3]	Tennessee
		1949			
Softwood	8,487,756	2,712,284	2,710,912	2,847,042	227,518
Hardwood	3,080,876	855,277	542,900	1,267,184	415,515
TOTAL	11,568,632	3,567,561	3,243,812	4,114,226	643,033
		1950			
Softwood	10,203,910	3,213,203	3,750,149	2,940,332	*
Hardwood	4,385,426	1,289,125	1,006,908	1,685,644	403,749
TOTAL	14,589,336	4,502,328	4,757,057	4,625,976	703,975
		1951			
Softwood	8,651,944	2,911,174	3,277,320	2,325,864	*
Hardwood	4,658,926	1,451,979	1,033,573	1,792,630	380,744
TOTAL	13,310,870	4,363,153	4,310,893	4,118,494	518,330
		1952 & 1953			
		Not Available			

[1] North Carolina, South Carolina, Virginia.
[2] Alabama, Florida, Georgia.
[3] Arkansas, Louisiana, Mississippi, Oklahoma, Texas.
[4] Figure not published by Census.

Production of Oak Lumber, Eastern U.S.

(Thousands of bd. ft.)

1899—4,549,805	1930—1,661,362
1910—3,514,831	1935—1,194,457
1920—1,853,426	1940—1,467,137
1941—2,207,691	1947—3,192,842
1942—2,762,204	1948—3,377,516
1943—3,037,979	1949—2,518,208
1944—3,291,123	1950—3,346,749
1945—2,858,342	1951—3,562,379
1946—Not available	1952—Not available

Source: Forest Service; Bureau of Census.

Production of Southern Yellow Pine Lumber in U.S.

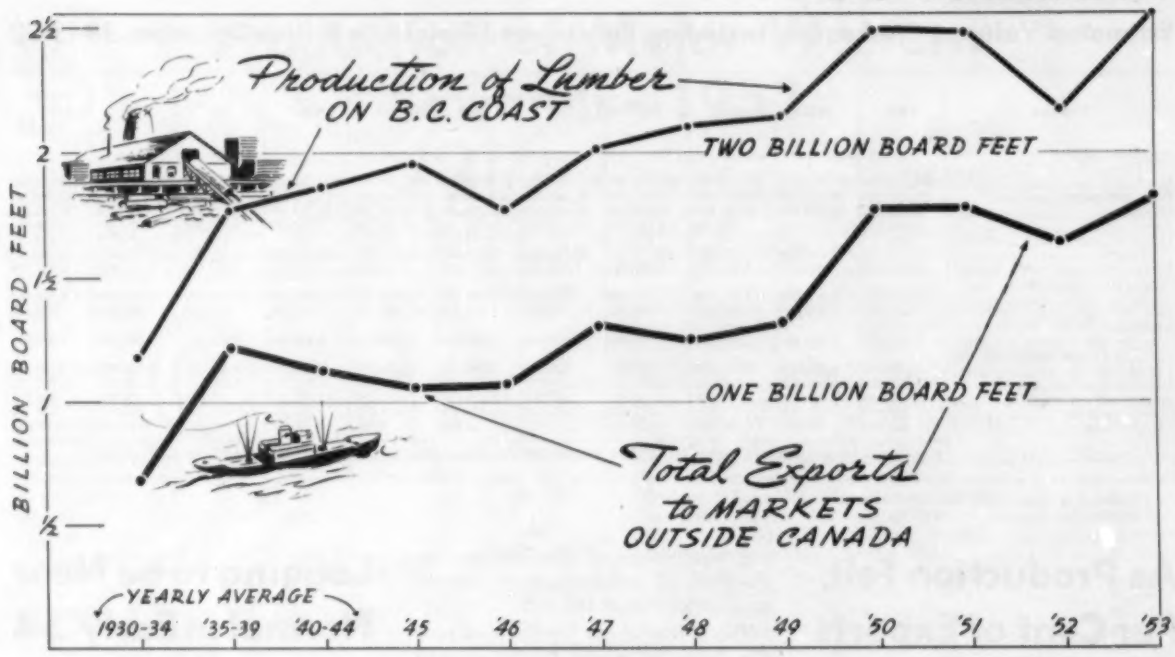
NOTE: This table includes yellow pine lumber produced in the New England, Middle Atlantic, Central and Prairie States as well as the South. Production of Southern Yellow Pine accounts for all but a very small percentage of the annual totals shown herewith.

(Thousands of bd. ft.)

1869— 1,378,000	1942—11,761,397
1879— 2,379,000	1943— 9,961,589
1889— 4,220,000	1944— 8,132,194
1899— 9,669,641	1945— 7,210,066
1905— 8,771,966	1946— 9,375,859
1910—14,143,471	1947— 9,473,360*
1915—12,177,335	1948—Not available
1920— 8,964,313	1949— 8,258,694*
1925—13,235,936	1950— 9,939,069*
1930— 7,450,238	1951— 8,514,353*
1935— 5,960,246	1952—Not available
1940—10,162,966	
1941—10,338,693	

*Southern Yellow Pine only.

Source: Forest Service; Bureau of Census.



Export Value Up, Near $1½ Billion; DollarShortageFelt

Canada's exports of forest products during the past year or so have totaled approximately $1.4 billion, and lumber has accounted for about 25 percent. The big items were pulp and paper, especially newsprint.

The tables show that lumber production in Canada has increased approximately 70 percent from prewar and domestic consumption has risen some 60 percent, emphasizing the importance of the home market, the largest single outlet for Canada's lumber production. Increased production depends largely on the ability of the home and U.S. markets to absorb Canada's sawmill output because the United Kingdom and Commonwealth markets show a decline from their prewar pattern. The table showing percentage distribution of Canada's lumber exports points up this fact.

When Commonwealth countries were virtually out of the picture as customers for Canadian lumber, the United States took 84 percent of Canada's lumber exports in 1950, this unprecedented movement to the American market stemming primarily from the impact of the Korean War. The dollar shortage has been the overriding factor in discouraging the Commonwealth countries.

Prices Are Down, Freight Rates Up, But B. C. Optimistic

by
A. D. ANDERSON
President, British Columbia Manufacturers Association, Vancouver, B.C.

Exports markets during the last quarter of 1953 staged a strong come-back under the influence of need and extremely favorable prices. What will develop in the international field remains to be seen, but there are probably more favorable factors than otherwise. The possibility of world conflict appears to be receding under the cold logic of the destructive power of atomic weapons.

The outlook for the coast lumber industry this year appears more promising than a year ago. There are problems, of course. Lumber prices are depressed and lumber freight rates, increased twice during 1953, by the Canadian railroads, will continue to curtail domestic rail business. However, the export market looks brighter and there is nothing in the foreseeable future to warrant undue pessimism. The Canadian economy is generally buoyant and every indication points to greater industrial activity, except possible defense projects which may be curtailed to some extent and settle into a steady pattern.

Late '54 a Question Mark

Some soft spots may develop in the U.S., but construction—the great economic indicator—appears to be headed for another near-boom year in which housing will participate substantially.

The coast industry is now fairly well booked with export orders until early summer when North American markets generally open up. The last half of 1954 remains a question mark, as most authorities agree United Kingdom softwood imports may be limited and North America will not likely be expected to supply more than some 800,000,000 f.b.m.

Competition To Be Keen

The two important exports markets, Australia and South Africa, will probably not equal the 1953 volume, but Japan, Korea and other areas show some signs of taking up some of the slack.

Competition for export markets will be very keen and will narrow margins for earnings on the huge capital investments in up-to-date integrated forest industries on the coast region. British Columbia's perennial difficulties, long freight hauls and high cost of production, promise to put the lumber industry through the acid test during the year.

BR. COLUMBIA

Estimated Value of Production, Including Loading and Freight, in British Columbia, 1943-52

Product	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	Ten-year Average, 1943-52
Lumber	$66,520,000	$81,495,000	$78,244,000	$87,013,502	$155,761,223	$219,289,000	$206,228,610	$303,384,204	$278,904,266	$280,006,490	$175,684,638
Pulp and paper	25,597,000	30,291,000	33,782,000	41,800,555	57,145,678	73,989,000	68,482,241	78,739,573	135,167,761	129,238,520	67,733,332
Shingles	8,232,000	10,006,000	10,544,000	12,946,506	23,625,946	25,094,000	16,881,240	37,502,968	32,537,442	23,878,880	20,184,898
Boxes	4,697,000	7,218,000	7,855,000	8,288,491	10,430,608	6,129,000	3,424,268	3,827,067	4,062,133	2,367,450	5,830,902
Doors	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Plywood	.....	6,100,000	6,000,000	9,120,000	20,820,000	22,430,000	21,500,000	26,250,000	34,500,000	36,572,000	20,366,800
Piles, poles, and mine-timber	2,367,000	3,088,000	2,986,000	5,125,762	5,225,000	4,158,000	4,470,379	5,127,681	5,805,745	9,540,240	4,691,390
Cordwood, fence-posts, and lagging	4,485,000	3,208,000	2,821,000	2,547,488	2,200,000	1,671,000	2,058,200	2,189,249	2,349,720	2,675,870	2,620,053
Ties, railway	268,000	434,000	507,000	478,519	580,000	671,000	467,127	281,308	633,069	963,260	533,225
Additional value contributed by the wood-using industry	2,800,000	1,600,000	1,500,000	1,700,000	1,600,000	1,800,000	2,000,000	2,250,000	2,812,500	2,530,000	2,056,550
Laths and other miscellaneous products	1,400,000	1,500,000	1,500,000	1,400,000	1,200,000	1,598,000	1,454,000	1,723,616	1,994,340	2,164,660	1,593,462
Logs exported	1,555,000	2,065,000	1,766,000	2,349,280	3,313,672	6,435,000	4,039,069	5,741,784	4,981,597	5,401,410	3,763,781
Pulp-wood exported	16,000	35,000	25,000	6,787	32,610	29,000	139,200	741,128	99,375	226,900	126,100
Christmas trees	227,000	236,000	271,000	402,656	293,552	470,000	445,965	383,549	939,390	912,700	478,131
Cascara bark	159,000	99,000	84,000	192,421	59,000	23,000	9,350	18,925	20,572	18,130	62,630
Totals	$119,494,000	$146,611,000	$147,655,000	$173,471,370	$293,295,289	$363,786,000	$331,589,349	$466,371,142	$504,807,930	$496,506,560	.....

[1] Included in wood-using industry value.
[2] Average for nine-year period only.

As Production Fell, Per Cent of Exports Highest in 23 Yrs.

by
H. R. MAC MILLAN
Chairman of the Board, MacMillan & Bloedel, Ltd., Vancouver, B.C.

A price decline of about 13 percent below the average for the preceding year reduced lumber production in British Columbia in 1953. Production in the coast region in 1952 dropped from 11 percent in 1951 and 13½ percent from 1950. It is serious for the province that costs of producing an export commodity should be rising while sales costs, governed solely by world conditions, are falling. It is significant that even though production of lumber in British Columbia decreased, the proportion for the coast region sold outside Canada reached the highest in 23 years.

At the beginning of 1953 there was no pronounced trend in sight. Production and consumption seemed to be in balance for a few months. There is some threat of a greater export of Russian lumber being offered next summer. If Russia decides to export more lumber, she will sell it, and British Columbia will be the chief loser.

World Market Fixes Prices

As world supplies become more free, buyers are requiring a higher standard of performance from sawmills, Therefore, sawing, drying, trimming, planing, marking, grading, observance of contract and inspection of product must receive more attention at the mill.

The prices of our lumber and pulp are fixed by world market conditions. Over 75 percent of the lumber product of the British Columbia coast region is sold outside Canada.

It may not be generally realized that British Columbia supplies to the world market less than 3 percent of the lumber consumed. Therefore it becomes obvious that the province's industry can exercise little or no influence upon the price level of that commodity, which is fixed throughout the world by the constant working of the law of supply and demand.

No Price Support

There are no price-support policies for forest industries, nor should there be. Therefore, the forest industries of this area differ as widely as possible from the sheltered industries with which so many of us are acquainted. If our costs of production rise, we cannot raise our price to compensate. It is quite possible that our costs can be rising, speaking as an industry, while our sale prices are declining. That has been happening for a great deal of the time over the last two years. And no matter how high our costs may rise, we have no course open to us except to sell in the open markets of the world and accept the price we can get.

There is another course open to us, of course—to close down our mills and cease production, and that has been adopted by quite a few companies that have been operating in the British Columbia coastal area as lately as two or three years ago.

Logging to be Near Normal in Early '54

by
J. A. JOHANSSON
Chairman of the Board of Directors, British Columbia Loggers Association

The decline in the price of logs last Spring, when the products of the log faced the most uncertain and difficult markets in many years, has been followed by a partial recovery. There is now a basis for optimism that log production will continue at a near normal level for at least the first part of 1954. This can be accomplished only by careful management and maximum efficiency of workers at all levels, because operating costs have been increased by higher wages scales negotiated without work stoppage last Summer and by new provincial taxation, while machinery and supply costs remain high.

Our association has intensified its effort to reduce accidents. The coast forest industry's "Safety Week" last October provided a notable example of what can be done when men and management combine in a joint effort. Among our association members as a group, the accident toll, compared with the corresponding week of the previous year, was cut by two-thirds.

Market for Swedish Prefabs

Sweden's exports of pre-fabricated timber houses showed a considerable decline during the past year, while sales on the home market increased substantially. Exports totalled 7,650 tons to a value of $1,700,000 during the January-November period, as compared with 22,450 tons for the whole of 1952 and 44,500 tons in 1951.

MAJOR MILL CUT

Production of Major Western Sawmills—1953

(Following are lumber production figures for all the major sawmills in the United States and Canada and Alaska. THE LUMBERMEN wishes to express its thanks to the hundreds of mills which cooperated in making this survey possible. Lumber production for the Weyerhaeuser Timber Co. is not reported by individual mill; however the company's annual report recently released shows a 1953 total cut for 12 sawmills in Oregon and Washington of approximately 1,120,000,000 bd. ft.—Editor).

Firm Name	*Location*	*Lbr. Ft. BM*
POTlatch Forests Inc.	Lewiston, Ida	269,337,734
Long-Bell Lumber Co.	Longview, Wash.	262,587,039
Coos Bay Lumber Co.	Coos Bay, Ore.	191,102,127
Canadian Western Lumber Co.	Fraser Mills, B. C.	164,810,076
MacMillan & Bloedel Ltd., Can. White Pine Div.	Vancouver, B. C.	154,064,881
MacMillan & Bloedel, Ltd., Chemanius Div.	Chemanius, B. C.	131,008,981
C. D. Johnson Lbr. Corp.	Toledo, Ore.	130,754,000
Canadian Forest Products, Ltd., Eburne Div.	Vancouver, B. C.	130,138,725
MacMillan & Bloedel, Ltd., Alberni—Pacific Div.	Port Alberni, B. C.	124,063,333
Edward Hines Lbr. Co	Hines, Ore.	121,235,519
Irwin & Lyons Inc.	North Bend, Ore.	121,192,032
Pope & Talbot Inc.	St. Helens, Ore.	120,177,690
MacMillan & Bloedel, Ltd., Somass Div.	Port Alberni, B. C.	119,705,000
Universal Box Co.	Vancouver, B. C.	116,000,000
Southwest Lumber Mills, Inc.	Phoenix, Ariz.	113,766,703
Alaska Pine Co., Ltd.	Vancouver, B. C.	113,500,000
Diamond Match Co.	Spokane, Wash.	112,000,000
The McCloud River Lbr. Co.	McCloud, Calif.	110,179,000
Santiam Lumber Co.	Lebanon, Ore.	104,125,000
Roseburg Lumber Co.	Roseburg, Ore.	103,558,495
J. Neils Lumber Co.	Libby, Mont.	99,463,000
The Pacific Lumber Co.	Scotia, Calif.	99,163,000
Anaconda Copper Min. Co.	Bonner, Mont.	95,192,748
B. C. Forest Products, Ltd., Cowichan Div.	Youbou, B. C.	95,500,000
Simpson Logging Co.	Shelton, Wash.	93,421,118
Hammond Lumber Co.	Samoa, Calif.	91,270,000
Brooks-Scanlon Lbr. Co	Bend, Ore.	90,342,000
B. C. Forest Products, Ltd., Victoria Div.	Victoria, B. C.	88,000,000
Tahsis Company, Ltd.	Vancouver, B. C.	87,878,000
Diamond Match Co.	Chico, Calif.	85,000,000
Union Lumber Co.	Fort Bragg, Calif.	84,000,000
B. C. Manufacturing Co., Ltd., New Westminster,	B. C.	83,760,000
Western Forest Industries, Ltd., Honeymoon Bay,	B. C	83,217,217
Boise-Payette Lbr. Co	Boise, Ida.	81,235,000
Oceanside Lumber Co.	Garibaldi, Ore.	79,858,406
Pope & Talbot, Inc.	Oakridge, Ore.	79,333,158
Medford Corporation	Medford, Ore.	78,363,000
Long-Bell Lumber Co.	Vernonia, Ore.	77,536,000
Diamond Lumber Co.	Glenwood, Ore.	77,184,831
Willamette Valley Lbr. Co.	Dallas, Ore.	76,864,000
R. L. Smith Lumber Co.	Anderson, Calif.	76,718,000
Booth-Kelly Lumber Co.	Springfield, Ore.	76,347,416
Pickering Lumber Co.	Standard, Calif.	74,671,000
Long-Bell Lumber Co.	Weed, Calif.	70,000,000
Ohio Match Co.	Heutter, Ida.	69,500,000
Willamette Valley Lbr. Co.	Foster, Ore.	65,304,000
St. Paul & Tacoma Lbr. Co.	Tacoma, Wash.	65,204,000
Van Vleet Lumber Co.	Rainier, Ore.	65,141,277
Coos Head Timber Co.	Coos Bay, Ore.	63,750,000
Schafer Bros., Lbr. & Shg. Co.	Aberdeen, Wash.	63,635,504
Oregon Pulp & Paper Co.	Salem, Ore.	63,578,000
Edward Hines Lbr. Co.	Westfir, Ore.	62,908,020
LHL Lumber Co.	Carlton, Ore.	61,618,945
Cascade Lumber Co.	Yakima, Wash.	60,454,000
Setzer Products Co.	Sacramento, Calif.	59,944,000
Hillcrest Lumber Co., Ltd.	Mesatchie Lake, B. C.	59,783,000
Long-Bell Lumber Co.	Gardiner, Ore.	59,343,640
Robert Dollar Co.	Glendale, Ore.	59,089,326
Hudspeth Pine Inc.	Prineville, Ore.	58,680,903
Umpqua Plywood Corp., Fir Mfg. Div.	Myrtle Creek, Ore.	58,000,000
Pope & Talbot Inc.	Port Gamble, Wash.	57,977,373
McIntosh Lumber Co.	Blue Lake, Calif.	56,368,414
Cape Arago Lbr. Co.	Empire, Ore.	56,256,061
Eureka Redwood Lbr. Co.	Eureka, Calif.	55,687,310
Inman-Poulson Lbr. Co.	Portland, Ore.	55,168,127
Giustina Bros.	Eugene, Ore.	54,470,490
New Mexico Timber Co.	Albuquerque, New Mex.	54,000,000
Biles-Coleman Lbr. Co.	Omak, Wash.	53,824,000
California Barrel Co.	Arcata, Calif.	51,774,000
Walton Lumber Co.	Everett, Wash.	50,000,000
Long-Bell Lumber Co.	Eugene, Ore.	49,488,450
B. C. Forest Products, Ltd.	Hammond, B. C.	49,300,000
J. Herbert Bate Co.	Walowa, Ore.	49,053,640
Klamath Basin Pine Mills	Klamath Falls, Ore.	48,795,742
Cal-Ida Lumber Co.	Auburn, Calif.	48,500,000
Ponderosa Lumber Sales	Redmond, Ore.	48,250,000
Pine Products Co.	Prineville, Ore.	48,000,000
Seaboard Lumber Co.	Seattle, Wash.	47,900,000
Lincoln Lumber Co.	Lincoln, Wash.	47,788,663
Valsetz Lumber Co.	Valsetz, Ore.	47,473,411
Winton Lumber Co.	Martell, Calif.	46,706,080
J. Neils Lumber Co.	Klickitat, Wash.	46,516,415
Westside Lumber Co.	Tuolumne, Calif.	46,000,000
Pilot Rock Lbr. Co.	Pilot Rock, Ore.	45,334,000
Flavelle Cedar Ltd.	Port Moody, B. C.	44,751,014
Pacific Pine Co., Ltd.	New West Minster, B. C.	43,343,999
Youngs Bay Lbr. Co.	Roseburg, Ore.	43,200,000
Fortuna Sawmills Inc.	Fortuna, Calif.	42,986,860
Collins Pine Co.	Chester, Calif.	42,200,000
U. S. Plywood Corp.	Mapleton, Ore.	42,111,000
M. B. King Lbr. Co., Ltd.	North Vancouver, B. C.	42,077,000
High Sierra Pine Mills	Oroville, Calif.	41,767,000
Columbia-Hudson Lbr. Co.	Bradwood, Ore.	41,507,365
Stebco Inc.	Vancouver, Wash.	41,184,310
Gilchrist Lumber Co.	Gilchrist, Ore.	40,840,000
Mt. June Forest Pro. Co	Springfield, Ore.	40,664,633
Trask Lumber Co.	Tillamook, Ore.	40,124,418
Deer Park Pine Ind.	Deer Park, Wash.	40,014,247
Ft. St. John Lbr. Co., Ltd.	Dawson City, B. C.	40,000,000
Pacific Pine Co., Ltd.	New Westminster, B. C.	40,000,000
Michigan-Calif. Lbr. Co.	Camino, Calif.	39,484,000
Dwyer Lumber Co.	Portland, Ore.	39,001,660
Dollar & Patterson Co.	Glendale, Ore.	38,824,788
Eclipse Lumber Co.	Everett, Wash.	38,700,000
Blagen Lumber Co.	White Pines, Calif.	38,441,997
Timber Products Co.	Medford, Ore.	38,243,361
U. S. Plywood Corp.	Redding, Calif.	38,175,000
Rosboro Lumber Co.	Springfield, Ore.	38,094,000
Fisher Lumber Co.	Marcola, Ore.	38,000,000
Elk Lumber Co.	Medford, Ore.	37,769,000
Scott Lumber Co.	Burney, Calif.	37,694,000
Kappler Lumber Co.	Mulino, Ore.	37,483,953
Shepard & Morse Lumber Co.	Westport, Ore.	37,456,294
Nettleton Timber Co.	Seattle, Wash.	37,035,000
Timberland Lumber Co.	New Westminster, B. C.	36,800,000
Clemens Forest Products Inc.	Philomath, Ore.	36,798,019
Intermountain Lumber Co.	Missoula, Mont.	36,373,000
Associated Lbr. & Bx. Co.	Wilseyville, Calif.	36,297,450
C. W. Gurrier Lumber Co.	Springfield, Ore.	36,287,200
Tygh Valley Lbr. Co.	Tygh Valley, Ore.	36,000,000
Paul Bunyan Lbr. Co.	Susanville, Calif.	35,763,000
Anderson & Middleton Lbr. Co.	Aberdeen, Wash.	35,757,734
Stimson Lumber Co.	Forest Grove, Ore.	35,736,703
West Oregon Lbr. Co.	Portland, Ore.	35,671,594
Clover Valley Lbr. Co.	Loyalton, Calif.	35,586,150
Simpson Logging Co.	Klamath, Calif.	35,500,000
U. S. Plywood Corp.	Seattle, Wash.	35,474,300
Rockport Redwood Co.	Rockport, Calif.	35,393,103
Twisp-Wagner Lbr. Co.	Twisp, Wash.	35,187,000
Wilbur Lumber Co.	Wilbur, Ore.	35,000,000
Dolly-Varden Lumber Co.	Arcata, Calif.	34,726,564
Harris Pine Mills	Pendleton, Ore.	34,400,000
Olympic Hardwood Co.	Raymond, Wash.	34,337,737
Coast Pacific Lumber Co.	Eureka, Calif.	34,044,541
Kinzua Corporation	Kinzua, Ore.	33,628,132
Oregon Lumber Co.	Baker, Ore.	33,347,940
Sound Lumber Co.	Arcata, Calif.	33,111,094
Moore Mill & Lbr. Co.	Bandon, Ore.	33,072,513

MAJOR MILL CUT

Firm Name	Location	Lbr. Ft. BM
Mt. Emily Lumber Co.,	La Grande, Ore.	33,065,000
Alley Lumber Co. Inc.,	Medford, Ore.	33,006,146
Trinity Alps Lbr. Co.,	Hayfork, Calif.	32,981,667
Wauna Lumber Co.,	Wauna, Ore.	32,637,910
Denebo Lumber Co.,	Eugene, Ore.	32,500,000
Sacramento Lbr. & Box Co.,	Woodleaf, Calif.	32,108,560
Shechert Lbr. Co.,	Marysville, Calif.	32,045,100
Western Studs,	Arcata, Calif.	32,000,000
Bay City Lbr. Co.,	Aberdeen, Wash.	31,954,593
Moore-Whittington Lbr. Co.,	Victoria, B. C.	31,790,000
Midstate Lbr. & Sup. Co.,	Prineville, Ore.	31,750,000
Arcata Redwood Co.,	Arcata, Calif.	31,560,000
Prouty Lbr. & Bx. Co.,	Warrenton, Ore.	31,000,000
Associated Lbr. & Box Co.,	Roseburg, Ore.	31,000,000
Corvallis Lumber Co.,	Corvallis, Ore.	30,941,000
Ochoco Lumber Co.,	Prineville, Ore.	30,935,000
Northern Redwood Lbr. Co.,	Korbel, Calif.	30,868,886
Eldorado Lumber Co.,	Klamath Falls, Ore.	30,867,550
E. K. Wood Lumber Co.,	Reedsport, Ore.	30,363,000
Quincy Lumber Co.,	Quincy, Calif.	30,213,000
Crane Mills,	Paskenta, Calif.	30,110,000
St. Maries Lumber Co.,	St. Maries, Ida.	30,000,000
Eatonville Lbr. Co.,	Eatonville, Wash.	29,624,027
Holmes-Eureka Lumber Co.,	Eureka, Calif.	28,635,559
Feather River Pine Mills,	Feather Falls, Calif.	28,572,160
B. C. Forest Products,	Vancouver Div., Vancouver, D. C.	28,200,000
Hallock & Howard Lbr. Co.,	Winchester, Ida.	28,000,000
Warm Springs Lbr. Co.,	Warm Springs, Ore.	28,000,000
Dickman Lumber Co.,	Tacoma, Wash.	27,500,000
Consumers Co-Operative Ass'n,	Swisshome, Ore.	26,000,000
Glaspie Lumber Co.,	North Vancouver, B. C.	26,000,000
Wood Products Corp.,	Chehalis, Wash.	25,993,055

Firm Name	Location	Lbr. Ft. BM
Alexander-Stewart Lumber Co.,	Prineville, Ore.	25,689,060
Caldor Lumber Co.,	Diamond Springs, Calif.	25,200,000
Car-Ad Company,	Klamath Falls, Ore.	25,044,243
Seattle Cedar Lbr. Mfg. Co.,	Seattle, Wash.	25,000,000
Evans Products Co.,	Coos Bay, Ore.	24,798,161
Columbia Valley Lbr. Co.,	Bellingham, Wash.	24,790,878
Stimson Mill Co.,	Seattle, Wash.	24,060,000
Meadow Valley Lumber Co.,	Quincy, Calif.	23,729,000
Mt. Shasta Pine Mfg. Co.,	Mt. Shasta, Calif.	23,000,000
Oregon Lumber Co.,	Dee, Ore.	22,419,565
Jones Lumber Co.,	Portland, Ore.	22,400,000
Cabax Mills,	Grabts Pass, Ore.	22,302,000
White Pine Lumber Co.,	Alturas, Calif.	21,698,160
Standard Lbr. & Mfg. Co.,	Carlsborg, Wash.	21,650,000
Packwood Lumber Co.,	Packwood, Wash.	20,264,825
A. F. Lowe Lumber Co.,	Mollala, Ore.	20,176,000
Kingsley Lumber Co.,	Portland, Ore.	20,000,000
Graeagle Lumber Co.,	Graeagle, Calif.	19,479,130
Raymond Lumber Co.,	Raymond, Wash.	19,117,000
Willite Redwood Products Co.,	Willits, Calif.	18,712,000
Picco Logging Co.,	Montesano, Wash.	18,513,889
Magnolia Lumber Co.,	Rogue River, Ore.	18,323,126
S. M. Simpson Ltd.,	Kelowna, B. C.	16,700,000
Placerville Lumber Co.,	Placerville, Calif.	16,500,000
Mt. Whitney Lumber Co.,	Johnsondale, Calif.	16,500,000
L. & K. Lumber Co.,	North Vancouver, B. C.	16,297,700
Trinity National Lumber Co.,	Fort Seward, Calif.	13,806,536
Tarter Webster & Johnson,	Delleker, Calif.	13,413,318
Associated Lbr. & Box Co.,	Dorris, Calif.	12,597,761
Aloha Lumber Co.,	Aloha, Wash.	9,640,000

NOTE—In some instances the production figures include the cut of several mills.

Production of Major Southern Sawmills—1953

Firm Name	Location	Lbr. Ft. BM
Dierks Lbr. & Coal Co.,	Kansas City, Mo.	93,526,000
Russellville Lumber Co.,	Sumter, S. C.	75,676,145
Southern Pine Lumber Co.,	Diboll, Texas	67,208,715
Kirby Lumber Co.,	Houston, Texas	64,150,000
Frost Lumber Industries,	Shreveport, La.	60,000,000
E. L. Bruce Comoany,	Memphis, Tenn.	56,820,000
William Ritter Lbr. Co.,	Columbus, Ohio	54,000,000
Crossett Lumber Co.,	Crossett, Ark.	52,148,124
D. L. Fair Lumber Co.,	Louisville, Miss.	51,906,835
Anderson-Tully Company,	Memphis, Tenn.	51,876,019
Roy O. Martin Lbr. Co., etc.,	Alexandria, La.	46,330,886
Burruss Land & Lumber Co.,	Lynchburg, Va.	45,000,000
George-Pacific Plywood Co.,	Augusta, Georgia	40,787,296
Mansfield Hardwood Lbr. Co.,	Shreveport, La.	37,780,351
King Lumber Co.,	Canton, Miss.	37,670,292
Scotch Lumber Co.,	Fulton, Ala.	34,500,000
Fordyce Lumber Co.,	Fordyce, Ark.	34,000,000
Texas Long Leaf Lbr. Co.,	Trinity, Texas	33,120,491
W. T. Carter & Bros.,	Camden, Texas	32,000,000
Wimmiams & McKeithan Lbr. Co.,	Lynchburg, Va.	31,907,998
Allison Lumber Co.,	Bellamy, Ala.	28,896,567
W. E. Belcher Lumber Co.,	Centreville, Ala.	28,567,036
Woodward-Walker Lbr. Co.,	Taylor, La.	28,400,000
Mower Lumber Co.,	Charleston, W. Va.	28,000,000
Hillyer-Deutsch-Edwards,	Oakdale, Texas	27,560,245
Ozan Lumber Co.,	Prescott, Ark.	27,155,856
Southern Lumber Co.	Warren, Ark.	27,055,000
Gulf Lumber Co.,	Mobile, Ala.	25,775,741
Angelina County Lbr. Co.,	Keltys, Texas	25,511,887
Edens-Birch Lumber Co.	Corrigan, Texas	24,000,000
Greene Bros. Lumber Co.,	Elizabethtown, N. C.	23,523,391
Pat Brown Lumber Co.,	High Point, N. C.	23,488,604
Camp Mfg. Co.,	Franklin, Va.	23,375,784
Mobile River Saw Mill Co.,	Mount Vernon, Ala.	22,253,000
A. DeWeese Lumber Co.,	Philadelphia, Miss.	22,089,969
Chicago Mill & Lumber Co.,	Helena, Ark.	20,965,973
L. R. Foreman & Sons Lbr. Co.,	Elizabeth City, N C.	20,000,000
Crosby Forest Products Co.,	Picayune, Miss.	20,000,000
J. B. Belcher & Sons Sales Agency,	Bluefield, W. Va.	19,371,000
Foster Lumber Co.,	Fostoria, Texas	19,025,975
J. A. Bentley Lumber Co.,	Zimmerman, La.	18,715,822

Firm Name	Location	Lbr. Ft. BM
Edens-Birch Lumber Co.,	Cleveland, Texas	18,150,000
L. D. Kellogg Lbr. Co. Inc.,	Alexandria, La.	17,881,000
The Alger-Sullivan Lbr. Co.,	Century, Fla.	17,692,630
Chapman & Dewey Lumber Co.,	Memphis, Tenn.	17,555,884
Urania Lumber Co.,	Urania, La.	17,390,178
Whitener Lumber Co. Inc.,	Newberry, S. C.	17,000,000
Gennett Lumber Co.,	Asheville, N. C.	17,000,000
Foley Lumber Industries,	Shamrock, Fla.	16,519,948
Lightsey Brothers,	Miley, S. C.	16,348,000
Gurdon Lumber Co.,	Gurdon, Ark.	16,194,615
Sledge Lumber Co.,	Whiteville, N. C.	16,000,000
W. A. Belcher Lumber Co.,	Birmingham, Ala.	16,000,000
Woods Lumber Co.,	Memphis, Tenn.	15,000,000
Farris Hardwood Lumber Co.,	Nashville, Tenn.	15,000,000
Butler Lumber Co.,	Chase City, Va.	14,650,000
Wax Lumber Co.,	Woodville, Miss.	14,626,861
Williams Lumber Co.,	Rocky Mount, N. C.	14,200,000
Vredenburgh Sawmille Co.,	Vredenburgh, Ala.	14,073,493
J. L. Williams & Sons,	Sheridan, Ark.	14,000,000
Louisiana Long Leaf Lbr. Co.,	Fisher, La.	14,000,000
Clancy Lumber Co.,	Grayson, Ala.	13,505,000
Vidor Lumber Co.,	Vidor, Texas	13,500,000
Clinton Lumber Co.,	Retal, Miss.	13,200,000
Dargan Lbr. Co.,	Conway, S. C.	13,019,000
Marshall Lumber Co.,	Marion, N. C.	13,000,000
Louisiana Cypress Lbr. Co.,	Ponchatoula, La.	12,700,000
E. A. Stewart Lbr. Co.,	Texarkana, Texas	12,530,000
Seagrove Lumber Co.,	Seagrove, N. C.	12,371,523
O. L. Payne,	Wells, Texas	12,368,708
W. A. Ransom Lbr. Co.,	Harahan, La.	12,360,000
T. F. Miller Mill Co.,	Brewton, Ala.	12,236,000
Millen Lumber Co.,	Millen, Ga.	12,020,046
Bate Lumber Co.,	New Bern, N. C.	12,000,000
Sterling Lbr. & Supply Co.,	Goodwater, Ala.	11,750,000
Alexander Bros. Lumber Co.,	Columbus, Ga.	11,439,648
Smithfield Lumber Co.,	Smithfield, N. C.	11,093,893
Marion Lumber Co.,	Marion, S. C.	11,000,000
Bennett & Harper Lbr. Co.,	Piedmont, Ala.	11,000,000
Georgia-Pacific Plywood Co.,	Dumas, Ark.	11,000,000
J. F. Browning Lumber Co.,	Riceboro, Ga.	11,000,000
Hurtsboro Lumber Co.,	Hurtsboro, Ala.	11,000,000

MAJOR MILL CUT

Firm Name	Location	Lbr. Ft. BM
McGraw-Curran Lumber Co., Yazoo City, Miss.		11,000,000
H. D. Foote Lumber Co., Alexandria, La.		10,971,605
W. T. Vick Lumber Co., Hamilton, Ala.		10,954,665
Bond Bros., Louisville, Ky.		10,600,000
Phillips Lumber Co., Eupora, Miss.		10,500,000
Nickey Bros., Memphis, Tenn.		10,415,876
Stanley W. Gates, Oakdale, La.		10,113,993
Swift-Hunter Lumber Co., Atmore, Ala.		10,074,677
Commonwealth Lumber Co., Murphy, N. C.		10,055,533
Fuller Lumber Co., Lewisville, Ark.		10,000,000
Scott Lumber Co., Henderson, Ky.		10,000,000
Daugherty Lumber Co., Dothan, Ala.		10,000,000
Reynolds Bros. Lbr. Co., Albany, Ga.		9,995,653
Mullins Lumber Co., Mullins, S. C.		9,916,858
Cherry River Boom & Lbr. Co., Richwood, W. Va.		9,905,000
Bellgrade Lumber Co., Memphis, Tenn.		9,725,134
Long-Bell Lumber Co., Quitman, Miss.		9,700,000
Harless Lumber Co., Lake Charles, La.		9,688,656
Louisiana Delta Hardwood Lbr. Co., Trout, La.		9,675,117
C. L. Gray Lumber Co., Meridian, Miss.		9,593,778
Sinclair Lumber Co., Laurinburg, N. C.		9,500,000
M. W. Smith Sawmill Co., Camden, Ala.		9,483,000
Cary Lumber Co., Tillery, N. C.		9,445,131
Jacobs Lumber Co., Americus, Ga.		9,328,000
Frieberg Mahogany Co., Cincinnati, Ohio		9,181,193
Lumber River Mfg. Co., Lumberton, N. C.		9,170,000
Eureka Lumber Co., Washington, N. C.		9,041,000
Williams Lumber Co., Cleveland, Texas		9,029,626
Urbana Lumber Co., Urbana, Ark.		9,028,512
Cleveland Lumber Co., Cleveland, Texas		9,000,000
Dacus Lumber Co., West Memphis, Ark.		8,923,000
Kellogg Lumber Co., Monroe, La.		8,867,853
Stuart & Ruark Lbr. Co., Union Point, Ga.		8,850,000
Perry Lumber Co. of Selma, Selma, N. C.		8,803,000
S. E. Lackey Lumber Co., Forest, Miss.		8,688,000
Hutchinson Lumber Co., Georgetown, Miss.		8,532,860
Union Point Lbr. Co., Union Point, Ga.		8,500,000
Ocla Lbr. Sales Co., Ocla, Fla.		8,500,000
Nacogdoches Lbr. Co., Nacogdoches, Texas		8,500,000
McGowin Lumber Co., Pine Apple, Ala.		8,500,000
Melvin Lumber Co., Melvin, Ala.		8,312,856
Price Paschal Lbr. Co., Brandon, Miss.		8,305,960
Boettcher Lumber Co., Huntsville, Texas		8,267,687
Jim Wallis Lumber Co., Talladega, Ala.		8,254,369
Sullivan Lumber Co., Preston, Ga.		8,158,347
Conasuga River Lbr. Co., Canasuga, Tenn.		8,102,000
Mason Lumber Co., Madison, Ga.		8,053,842
Christian Lumber Co., Monticello, Ky.		8,000,000
Corinth Planing Mill Co., Corinth, Miss.		8,000,000
Ashepoo River Lbr. Co., Ashepoo, S. C.		7,862,388
Coastal Lumber Co., Lake City, S. C.		7,818,253
Neal Lumber & Mfg. Co., Blountstown, Fla.		7,750,000
Lexington Lumber Co., Orangeburg, S. C.		7,532,718
St. Joe Lbr. & Export Co., Port St. Joe, Fla.		7,500,000
E. Sondheimer Co., Sondheimer, La.		7,500,000
American Hardware Co., Petersburg, Va.		7,145,306
Roper Bros. Lbr. Co., Petersburg, Va.		7,096,200
Graham Lumber Co., Maplesville, Ala.		7,000,000
Korn Industries Inc., Sumter, S. C.		7,000,000
Currington-Burnett Lbr. Co., Greenville, Ala.		7,767,218
Walton Lumber Co., Dunbarton, Va.		6,709,758
Lakeside Lumber Co., Chatham, La.		6,558,544
Farris Lumber Co., Morton, Miss.		6,144,848
J. C. Martin Lumber Co., Waynesboro, Miss.		6,000,000
Webb Lumber Co., Armiston, Ala.		6,000,000
Olon Belcher Lumber Co., Brent, Ala.		5,528,157
Beechwood Lumber Co., Manchester, Ga.		5,500,000
J. R. Buckwalter Lbr. Co., Union, Miss.		5,386,262
Davis Lumber Co., Cullman, Ala.		5,126,482
Louisiana Central Lbr. Co., Clarks, La.		4,998,061
S. J. Peeler Lumber Co., Kosciuske, Miss.		4,519,549
Landram & Partridge Lbr. Co., Durant, Miss.		4,500,000
T. G. Strather Lumber Co., Newman, Ga.		4,461,337
Paterson-McInnis Lbr. Co., Gulf Hammock, Fla.		4,284,930
T. G. Layfield & Sons, Providence Forge, Va.		3,352,000
W. F. Bradley Lumber Co., Roberta, Ga.		3,000,000
W. E. Brooks & Son Inc., Tappahannock, Va.		2,713,094
Jeffreys-Spaulding Mfg. Co., Chase City, Va.		2,702,113
Georgia Southern Lbr. Co., Macon, Ga.		2,180,000
Columbus Lbr. & Supply Co., Columbus, Ga.		2,887,066

Note—In some instances figures may include more than one mill or cover production of a concentration plant. Most however are for straight sawmills.

Alaska

Columbia Lumber Co. of Alaska, Juneau	23,780,000
Ketchikan Spruce Mills, Ketchikan	21,227,000
Petersburg Lumber Co., Petersburg	796,249

Eastern Canada

Price Bros. & Co., Ltd., Quebec, Can.	50,790,000
The Pas Lumber Co., The Pas, Manitoba	33,770,000
J. J. McFadden Lbr. Co. Ltd., Blind River, Ontario	30,664,000
George Gordon & Co., Cache Bay, Ontario	18,011,692
Great Lakes Lbr. & Shipping Co., Ft. Williams, Ontario, Can.	2,393,466

Lake States & Northeast

D. W. Frampton, Columbus, Ohio	90,000,000
Atlantic Lumber Corp., Boston, Mass.	52,000,000
Conner Land & Lbr. Co., Leona, Wis.	25,996,485
Ford Motor Co., L'Anse, Michigan	23,321,981
William H. Champlin, Rochester, N. H.	20,900,000
Menominee Indian Mills, Neopit, Wis.	20,098,000
Homestake Mining Co., Spearfish, S. D.	18,000,000
Cadillac Soo Lbr. Co., Ste. St. Marie, Mich.	16,934,415
Northern Lumber Co., Poland, N. Y.	15,250,000
William Bonifas Lbr. Co., Neenah, Wis.	15,000,000
Abbott-Fox Lbr. Co., Iron Mountain, Mich.	12,294,489
White River Tbr. Co., Park Falls, Wis.	11,242,000
Tigerton Lumber Co., Tigerton, Wis.	10,700,000
Ahonen Lumber Co., Ironwood, Mich.	10,006,003
Goodman Lumber Co., Goodman, Wis.	9,700,000
Vulcan Lumber Co., Donken, Mich.	9,300,000
Grafton Lumber Co., Bethel, Maine	7,000,000
Yawkey-Bissell Hardwood Flooring Co., White Lake, Wis.	6,891,000

(Continued on Page 177)

U.S. Lumber Production by Region

(Thousand board feet)

Region	1910	1920	1930	1940	1945	1950	1951	1952
Northeastern	3,954,067	2,310,823	1,556,000	1,727,875	1,883,422	2,103,000	2,296,976	
Lake States	5,030,106	2,414,351	1,500,000	1,015,176	923,052	1,065,000	....	
Central & Prairie	4,751,957	3,043,964	2,030,000	2,507,986	2,321,432	2,426,000	3,155,850*	
South	17,432,424	15,231,862	12,080,000	12,677,790	10,876,566	13,896,000	12,818,371	
West	8,849,728	12,098,800	12,192,021	13,231,299	12,117,872	18,462,000	18,477,200	19,558,000
TOTAL U. S.	44,500,000	34,999,800	29,358,021	31,159,126	28,122,344	37,952,000	36,748,397	

Northeastern U. S. (New England; and Middle Atlantic States: Delaware, Maryland, N. J., N. Y., Pa.)
Lake States (Mich., Minn., Wis.)
Central & Prairie (Ill., Ind., Ky., Mo., Ohio, Tenn., W. Va., Nebr., Kan.)
South (N. C., S. C., Va., Ala., Ark., Fla, Ga., La., Miss., Okla., Texas)
West (Wash., Ore., Cal. & Nev., Ida., Mont., Utah, Colo., Wyo., Ariz., N. M., & S. Dak.)
*Includes Lake States
Source: Forest Service & Bureau of Census

MILL ENGINEERING
1953 Is Another Banner Year
in the advancement of well-engineered mill equipment—notably bark-removal

An outstanding 1953 development in the sawmill field was the attention given to log barking. Two noteworthy installations were those of the White River Wash., branch of the Weyerhaeuser Timber Co., and the Cascade Lumber Co., Yakima, Wash. The first installation was of the hydraulic type. This barker accommodates very small logs as well as the big ones up to 42 feet in length. The second installation was of the mechanical type and incidentally is the first barker to go into a western pine mill. This barker built on the log pond, barks all logs and puts them back into the water.

In both installations chippers were installed to convert leftover material unsuitable for lumber into pulp chips.

Southern millmen during the year likely displayed more interest in log barking and chipping than did their western contemporaries. The Crossett Lumber Co., decided to install a mechanical-type barker at its big Crossett, Arkansas, plant to produce chips for its own pulp mill.

Barkers in the South

The Fordyce Lumber Company, Fordyce, Arkansas, installed a mechanical barker and chipping facilities. The W. T. Smith Lumber Company, Chapman, Alabama, and the Warren Lumber Co., Warren, Arkansas, also installed log barking equipment during the year. Numerous other southern lumber companies are giving serious thought to barker installations.

The importance of log barking at sawmills is indicated in a report issued in January by the American Pulpwood Association. This association made a careful study of barking and chip production in the south and west, with the idea that it might be able to stimulate intelligent well-planned chip production which would be beneficial not only to the sawmills producing the chips but to the pulp mills which might purchase them.

Waste Is "Sidetracking"

One of the conclusions found in the report of this survey reads as follows, "Bark removal constitutes one of the biggest problems connected with the utilization of sawmill waste. Favor should be given to those bark removal methods and machines which past records have indicated to be the most successful. Concern over a 5 percent fibre loss from large volumes of waste material, currently representing a 100 percent loss as it disintegrates into smoke, constitutes unnecessary 'side tracking.'"

Here is another quotation from the report, "Assurance of high-quality bark-free chips coming from sawmills will involve: (A) The expense of lending technical assistance and instruction to sawmill operators and (B) the expense of close liaison between the two parties by the mill to assure proper quality control. Mills constantly furnishing poor quality chips might be unable to command the higher prices paid for those high quality chips showing a high pulp yield per ton of chips."

Another interesting comment in the report follows: "West Coast mills are manpower-conscious. Control equipment replaces manpower wherever the least savings are to be realized."

Gluing Progress Made

Progress was made by sawmills during the year in the glued-up lumber field. A notable example of sawmill interest in this field is the Hammond Lumber Co., Samoa, Calif. After more than two years experimentation the company's end gluing department in 1953 was able to maintain a seven-hour production of better than 10,000 feet. Material used is dry trim ends, stock that was formerly burned. The equipment can produce boards up to 20 feet long.

Strapping of lumber has now become about the universal practice especially in western mills. A new angle to lumber strapping was tried last year by the operator of a portable mill located at a rather remote site on Puget Sound. This operator put his cut into units which were strapped and dumped into saltwater and then boomed and towed to Seattle for reshipment. The operator found this system far cheaper than had the stock been trucked.

Boom Boats "Boom"

A review of industry trends would not be complete without mention of the increasing use of modern, well-designed and well-built boom boats. It has been only a few years since the first "boom boat," which consisted of a raft powered with a small gas engine, was put into use by the White River branch of the Weyerhaeuser Timber Co. at Enumclaw, Wash. But the economies and efficiency of this method of handling logs in mill ponds were so apparent that the idea was adopted at many mills throughout the west. But instead of rafts, sturdy, power boats are used.

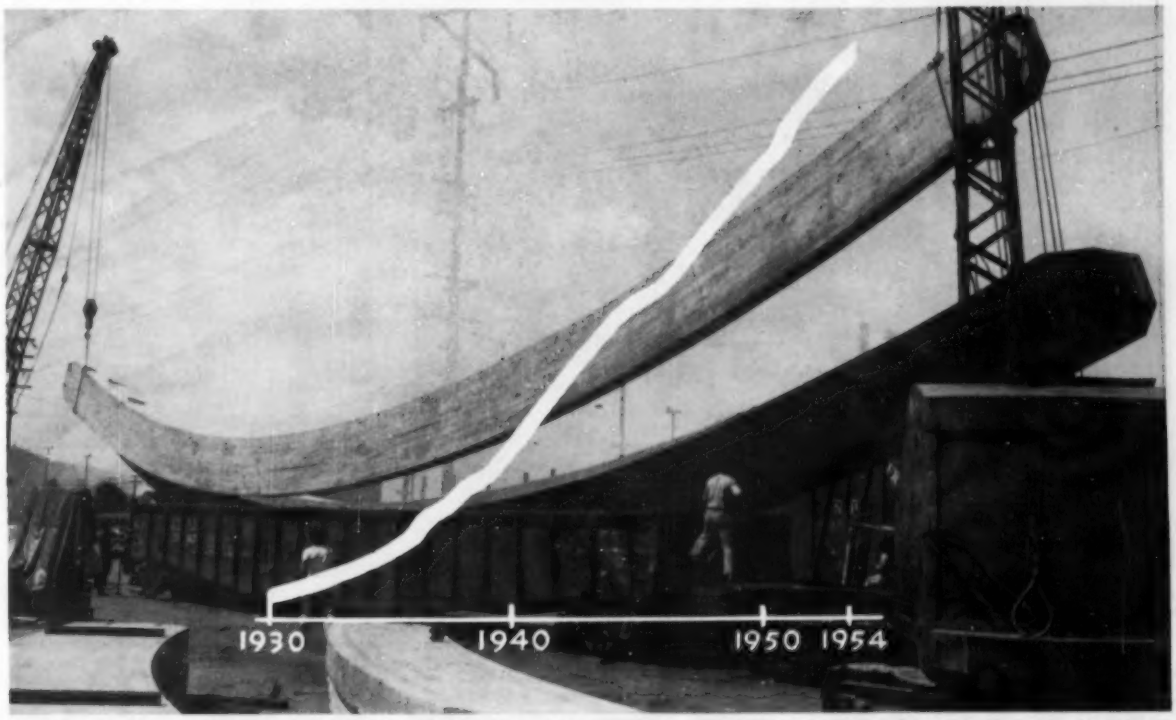
Some other trends and new 1953 developments affecting sawmills included greater interest in and use of carbide tipped saws; the introduction of a new tension guide for band saws, one of the first new developments of its kind in a long time; a new end printer on an automatic random length smooth end trimmer; a new type lumber stacker at the J. Neils Lumber Co., Libby, Mont.

A new development in England was the introduction of a trailer—mounted 42" band saw. The mill is designed to be driven from a tractor power unit.

Many New Mills

The mounting interest of sawmill operators in new and better sawmill and planing mill machinery and equipment was plainly indicated by the tremendous interest shown in the sawmill machinery show staged in New Orleans in 1953 by the Southern Pine Association. This was by all odds the most heavily attended show of its kind. And never, anywhere, has so much sawmill and planing mill machinery been displayed.

Many new mills were built in 1953, in fact it was a year of great activity in new mill construction. Work was started during the year on the new plant of the Kirby Lumber Co., Silsbee, Texas, which will be one of the largest mills in the south as well as in the United States. This new mill is scheduled to get into production late this year or early in 1955. The Diamond Match Co., put two big new modern mills into operation in 1953, one at Superior, Montana, and one at Lyman Springs, Calif.



GRAPHIC INDICATION OF THE GROWTH of structural glued laminating in the United States. From its swaddling infancy of around 25 years ago it has come a long way. Indications point toward continuance of the sharply upward trend. The line graph above depicts only the comparative growth of the industry as registered in the number of plants, the general production and the amount of wood used. There are no reliable statistical estimates on the amazing strides that glulam has made, either volume-wise or value-wise.

A New Era in Utilization— And a Revolution in Architecture

That's the story of glued wood lamination, presented here in a comprehensive review of this amazing young forest products industry

Glued timber structural framing for buildings and bridges has been used in Europe from the turn of the century. In the early thirties glued construction was introduced into the United States and one of the first American structures using glued laminated arches was constructed at the Forest Products laboratory at Madison as a service building.

Glued timber construction has come a long way since it was first used in America. Fabricators under the urge to improve their products have worked unceasingly to bring glued laminated timbers into commercial production. They have been assisted by U. S. Forest Products Laboratory, government bureaus, glue companies and lumber associations.

It seems that now design and laminating processes are well established and the industry should be considered a commercial standardized industry.

Because of their fine appearance and high strength qualities glued timbers are now very popular in America. One company alone has an annual production of four times that of all European producers.

Glued construction is extensively used for arches, beams, trusses, girders and columns in churches, schools, auditoriums, field houses and in all manner of commercial and industrial buildings. It is also extensively used in hangars, towers, bridges and in wooden ships and barges.

Glued timbers are smaller strength-for-strength and stronger size-for-size than sawn timbers. For some uses, such as columns, glued timber may be fifty per cent stronger than a timber of equal size and grade that is used as it comes from the sawmill.

Only by the use of glued construction can proper curved members be made in wood. Here then is a practical means for building arches that are high, wide and handsome and give to school, to auditorium, and to chapel those beautiful rainbow arch supports that can be left exposed like the old time heavy timber construtions.

Glued construction is the new-fangled timber stretcher that permits shop grown timbers to any size or shape that equipment can handle and railroads and trucks can ship.

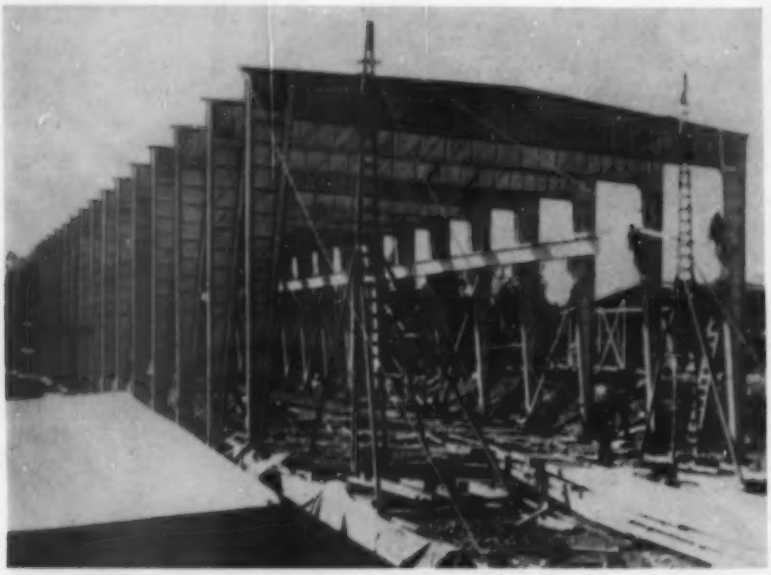
Glued timbers lend themselves well to preservative and fire retardant treatments and hold fastenings better than sawn timbers. They can be built to ornamental shapes and given ornamental treatments.

After an eight year program of

PHOTO AT TOP OF PAGE

Biggest timber arches ever manufactured being loaded at the Portland, Oregon plant of TIMBER STRUCTURES, INC. Consigned to the University of Montana at Missoula, the arches will be used to frame a field house 204 feet wide and 180 feet deep. There will be no interior posts or columns in the entire building to restrict the various athletic activities or to obstruct the spectators view.

There are twenty half arches in the shipment, each one 114 feet from tip to tip, weighing 7 tons and containing 10,745 board feet of lumber—enough to build a moderate size home. Entire shipment required five gondola cars alternated in the train with flat cars to permit overhang of the arches. Top of the load is 17 feet 7 inches high, which leaves overhead clearance of only three inches at some of the tunnels and overpasses along the route.



TIMBER STORE SHED, HOFORS, SWEDEN. Portal frames of 59 ft. span and 36 ft. free height; horizontal HB beam supports end of traveling crane. Structures Division of C. D. Johnson Lumber Co., Toledo, Ore., laminates in this country by the HB system.

tests and analysis, the Forest Products Laboratory furnished the basis for factual and realistic strength design of glued timbers, and lumber associations issued standards which give the proper manufacturing controls and assign working stresses to the various species and grades.

Research Program

The lumber industry, through National Lumber Manufacturers Assn., has embarked on a ten-year $1 million research program in which major emphasis will be given to glue lamination. During the first year of the program $100,000 will go to the lamination research and a like amount to surveying past, present and potential lumber markets.

These will be followed up for nine years by outlays of $100,000 annually on lamination research to be conducted by The Timber Engineering Co., NLMA research affiliate, (TECO).

Objectives of this industry-wide program include the following: Develop more construction usage for small pieces of lumber and for increasing utilization of secondary species; economical methods for patching; low-cost glue, easily applied and waterproof which sets quickly at low temperature; low-cost wood preservatives that can be applied prior to lamination; reduce costs of large laminated structural members; perfect techniques for laminating different species of lumber in combinations, such as using dense, heavy woods over lighter species in high-strength members.

A.I.T.C.

For several years an organization of timber fabricators for the standardization and promotion of timber construction had been discussed and about two years ago a successful effort was started and the present American Institute of Timber Construction was organized.

The active members of this institute are timber fabricating companies and in addition there are many associate members—treating companies, glue manufacturers, and lumber associations as well as manufacturers of timber connectors and other timber construction accessories. At present about ninety per cent of the timber fabricating industry of America is represented by the organization. There is also a professional membership which is composed of leading structural engineers, architects and personnel of laboratories and other allied organizations.

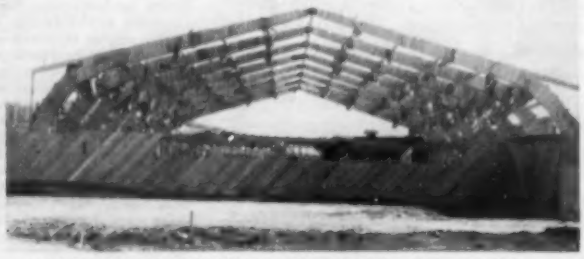
Bellevue, Wash. church of Douglas fir glulam arches—Timber Structures, Inc.

Hanrahan in Charge

The executice vice president is Mr. Frank Hanrahan who has an office in Washington, D.C., and who heads up all activities of the organization. Much of the work of the institute is performed by committees made up of the technical and executive personnel of the membership.

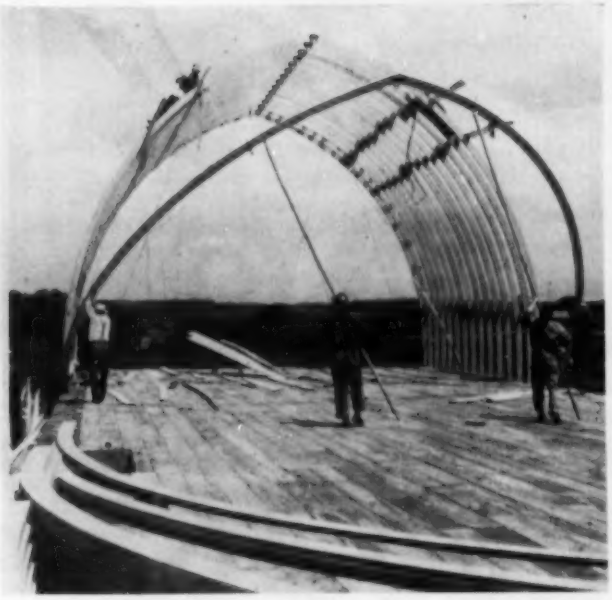
To date the most important activity of the committees has been the production of a set of Timber Construction Standards which sets up controls for design, fabrication, assembly and erection of structural timber framing as well as establishes a standard code of practice for the Seller and Buyer of the product.

SEATTLE, WASH. SCHOOLS constructed of 120-ft. glulam arches. —Associated Wood Products Co. of the Northwest.



GLULAM ARCHES SPANNING 97 ft. with glulam haunch build-up, and 5¼" x 11⅞" glulam purlins between arches at Dallas, Ore., high school gymnasium; laminator—Timber Tech Corp.

NEW FLORAL BUILDING for Los Angeles County Fair, Pomona, Calif. Eight arches by Summerbell of L. A. are 80-ft. glued laminated.



8 MEN IN 7 HOURS erected this 36 x 96' Type 4 Rilco barn at Durand, Wisconsin.

These standards, now completed, have been entirely approved by the industry and are now in the hands of the printer.

To Provide Standards

It is expected that the institute will rapidly become the source and clearing house for reliable unbiased information on all phases of structural timber framing where the owner, designer and builder can secure the latest and most sound information. This institute will provide the same high-class industry standards for timber construction as is now provided for the steel construction industry by the American Institute of Steel Construction.

Ward Mayer of Timber Structures, Inc., Portland, Oregon is president of the institute and Max P. Hanisch, Jr., Unit Structures, Peshtigo, Wis., is vice president. Together with a board of directors, they handle the executive work of the organization.

How Glulam Is Used

"The modern answer to the need for strong and durable timber framing", according to Verne Ketchum, chief engineer, Timber Structures, Inc., "is glued laminated construction.* Here are combined high quality materials, good workmanship and high technical skills. Now we may have curved wood members with the strength of the arch and the beauty of the rainbow."

Glulam has wide application in the building field in form of beams, rafters, trusses, arches, ribs—for barns, houses, halls, bridges, drive-in theatre screens, etc.; it gets into boats and ships as stems, keels, sterns, ribs and planking; into diverse specialty products such as bowling pins, baseball bats, aircraft propellers, cross arms, radar masts and dredge spuds, etc.

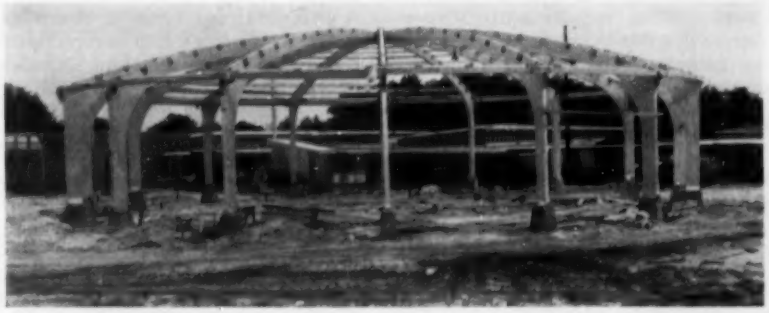
Quality at Moderate Cost

Efforts of the timber engineers have developed fabrication and construction to bring timber out front in the field of modern structural and architectural materials. New connectors, adhesives, treatments and finishes have progressed through extensive research and materially increased the knowledge of structural timber. Lumber groups, engineers, and architects have developed standards and specifications; fabricators have established extensive plants where engineering skills and machine production combine to produce quality goods at moderate cost.

Under spur of competition and product pride, timber construction has moved into better and wider fields. Modern timber structures are fabricated in shops to details and patterns, and shipped knocked down to the job for assembly and erection.

Extensive testing and development programs in United States and Canada have provided practical use information and design specifications for glued timber construction. This work had significant influence in effecting building code acceptance.

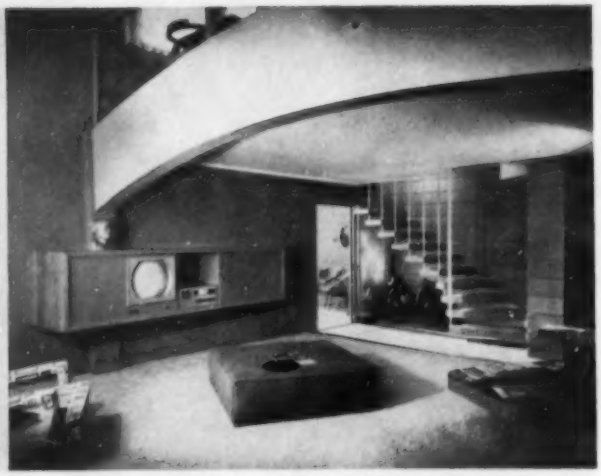
Due to extra strength for dryness, along with greater restriction and



LAMINATED ARCHES SPANNING 96 FT. used in construction of high school addition at Cocoa, Fla.—Unit Structures, Inc.

*Glue Laminated Construction has been defined in various ways indicating members composed of wood plies or laminations, affixed to each other by an adhesive, the grain of components substantially parallel. "Glulam" has come into generally accepted usage as abbreviation of "glue laminated."

Unique Los Angeles residence construction facilitated by 57 ft. glulam arch—Summerbell Roof Structures.



Interior of hillside home supported by 57 ft. glulam arch shown at top —Summerbell Roof Structures.

dispersion of defects than in sawn timbers, higher working stresses are allowed for glulam than for same size species and grade of sawn timbers.

Glulam vs. Sawn Timber

Increases of working stresses for glued timbers over sawn timbers:

Type of Stress	Percentage Increase
Bending	38 to 52%
Tension with grain	52 to 65%
Compression with grain.	58 to 66%
Horizontal shear	38%
Tension across grain	38%
Modulus of elasticity ...	12%

Large sawn timbers of previous years are no longer readily and generally available. But glued ones can be obtained in sizes and shapes to meet almost any structural needs. The size is practically limited only by economics and transportation. The potential supply of large structural members, which can thus be made up from trees too small to produce more conventional timbers, becomes almost unlimited. Special characteristics, not possible via direct sawing, can be built into glulam products to meet critical requirements. Glued lamination lends itself to seasoning to optimum moisture content before assembly and thus can be produced in a short time vs. weeks for large timbers; checks due to shrinkage will be materially minimized or practically non-existent; can be produced from rather narrow lumber by edge gluing. Laminated beams can be readily cambered to not show deflection after loading.

Thin boards are glue-laminated into curved members, such as arch ribs, by bending to desired curvature. Here glulam gets into a field in which rigid timbers have no place.

Glulam arches make excellent structural units filling a variety of uses; serving well on short and long spans under high or low roofs. These bring to contruction what has been referred to as "the best combination of clear span and ornamental appearance".

Light, curved glued timber ribs, which gained an enviable reputation as barn rafters, now get into a variety of moderate size structures, including stores, theatres, warehouses, arenas, etc. Curved roofs have become stylish. Ribs of curved Gothic shape, designed as true three-hinged arches, rise in a clear sweep from floor to ridge. These serve as both wall studs and roof rafters.

Glulam construction gets into the field of timber trusses, which come in wide assortment of sizes and shapes. Curved upper chords of bowstring trusses may be laminated and parallel chord timber trusses are now built with glued timbers for chords.

Popular in Schools

Modern school design tends toward low one-story structures, a type adapted to use of glulam components. A recommended type of classroom roof uses glued girders covered with 2-inch solid-laid sheathing. Insulation and roofing cover the sheathing. On underside, the attractive girders remain exposed and acoustical material installed between these components.

Treated glulam arches and timber now come into considerable use in bridges. Large girders make fine low-clearance construction for spans up to 60 feet and can be built at low assembly and erection cost. Pony bridges using bowstring timber trusses with glue treated top and bottom chords also make for economical structures.

How Labs Helped

Standards and practices in the laminating industry are essentially based on laboratory research and development. Studies on the preparation of wood, application of glues and their durability under a range of service exposures enable laminators to select the proper glues for each type of use. Laboratories and adhesive manufacturers have developed highly dependable wood-working glues. Research at the Madison, Wis., laboratory has determined the performance of glue joints under various service exposures, the strength is furnished laminated members, and gluing techniques to be used to produce dependable glue joints. A significant illustration of results of these developments has been the successful gluing of white oak stems, keels, and frames with waterproof glues for U. S. Navy nonmagnetic minesweepers — probably one of the most severe services required of wood.

Preservative Treatment

Recent developments and studies in preservative and fire-retardant treating of laminated members have been encouraging. With some restriction as to glue types, wood species and treating agents, wood can be treated first and then glued, or it can be glued and then treated.

The after-gluing application makes it possible to bore, cut and frame before treating, thus facilitating complete protective coating of all final surfaces.

Members of thorough penetration can be made by treating before gluing. For those which do not lend themselves to treatment because of size or shape, this is about the only way of producing adequately treated structures. Treating-before-gluing requires surfacing of each lamination to provide a reasonably clean joint surface for gluing. This has the disadvantage of removing a portion of the most heavily treated wood. Furthermore, the components should be glued and laid up as shortly as possible following final surfacing.

Today's structural lamination makes for larger and fewer members in a structure, thus reducing the extent of exposed surface area and consequently furthering fire resistance. A smooth surface resists ignition and large wood members can withstand fire for considerable time before failure. Unprotected steel columns will give way long before a heavy wooden column. (*) Pressure impregnated treating of glu-lam construction with modern fire retardants reduces ignition and combustion materially and checks the spread of flame. During a fire the treated wood maintains its load-bearing strength without sudden collapse.

Timber Connectors

Timber connectors are available in various sizes and types to serve specific joining and fastening functions, the development of which made practical the use of wood in structures which had previously been mainly limited to other materials.

Split rings, either beveled or straight-sided, for fitting into conforming grooves make for mechanical joining in timber construction. This type connector fits snugly into special-cut grooves, the inner ring surface bears against a fitting core and outer face of ring against outer wall of the groove.

Big Use for Rings

Toothed rings, used without grooving, are embedded by pressure into adjacent timbers as the members are pressed or clamped together. Although load carrying capacity is less than for split rings, the toothed ring has extensive use in frame structures, light construction and in places where grooving is either impossible or undesirable.

Claw plates, which fit into precut drops or recesses and have short teeth that are forced further into the wood. These are used singly in making timber-to-metal connections or in male-female pairs for timber-to-timber connections.

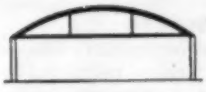
Shear plates, primarily designed for connecting wood to steel or wood to wood in demountable structures, fit into prebored recesses and are thus imbedded in the timber when in position. Principal uses include attaching columns to footings through steel straps, in connection with steel gusset plates, and for transferring loads from steel heel straps in bowstring trusses.

Other connectors are available for specialized applications such as the following: Clamping plates for placing between ties and guard timber to maintain predetermined spacing of ties on open-deck railroad structures; spike and circular grids for piles and poles.

Rings in Timber Joints

In timber joints, split rings and toothed rings function similarly, a part of the ring extending into adjacent joint members. Thus the load is transmitted by shear somewhat independently of the bolt. Female claw plates are adapted to use when the connector must lie flush with surface of the timber. In such connection, a bolt snugly fits the connector and the attached metal plate. Flush types of connectors depend on bolts for transmitting load by shear from member to member.

Strength of timber joints depends on type and sizes of connector, wood species, thickness and width of the members, distance of connector from the end of the timber, spacing of connectors, direction of load application with respect to direction of wood grain, and other factors.

TANGENT ARCHES	Churches Gymnasiums Chapels Theaters	24′ to 100′	8′ to 20′
RADIAL ARCHES	Gymnasiums Hangars Auditoriums Armories Skating Rinks Bowling Alleys	40′ to 120′	8′ to 20′
STRAIGHT ARCHED-PITCHED LAMINATED WOOD BEAMS	One-story Schools Stores Offices Residences Gymnasiums Industrial Buildings	20′ to 60′	6′ to 20′
CORD TRUSSES	Wide, Clear-Span Buildings Garages Factories Hangars Warehouses Gymnasiums	24′ to 200′	8′ to 20′
 TIED ARCHES	Stores Factories Theaters Warehouses Hangars	24′ to 65′	2′
UTILITY ARCHES	Small Hangars Warehouses Gymnasiums Theaters Community Buildings	28′ to 80′	2′ to 20′

Typical Structural Glulam Shapes

*Wood Handbook, Forest Products Laboratory, Madison, Wisconsin.

TRANSFERRING LAMINATION from finned rolls behind glue spreader to jig for incorporation into 100 ft. covered beam.

DRAWING GLUED LAMINATIONS against jig with threaded rods and blocks. Both scenes at Timber Structures plant.

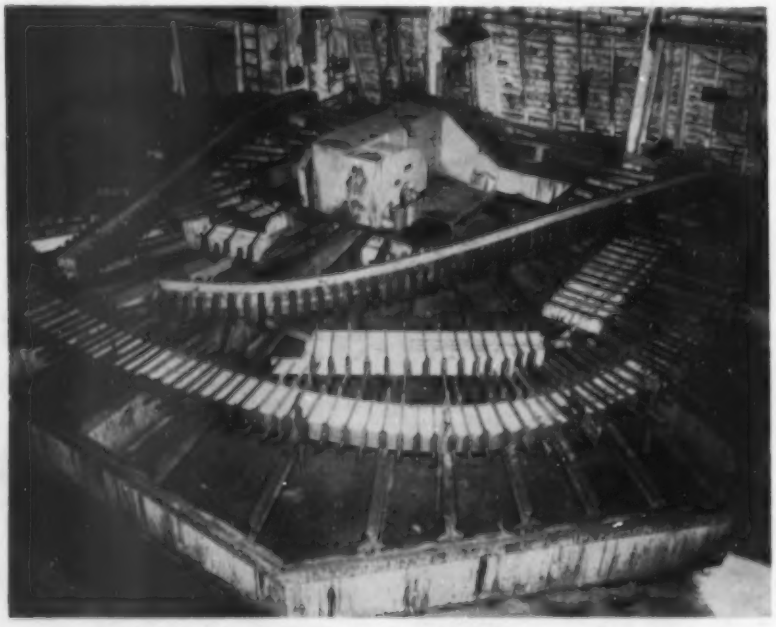
Need for Proper Specifications

Ward Mayer, president of AITC, in a speech given at The American Institute of Architects' 85th Convention stated that the economical solution for laminated structural members for normal construction will be found in the medium to low-grade lumber combinations. He told the architects they could help the cost situation by not needlessly specifying the highest grades or combinations. Another suggestion in the same direction was to specify waterproof glues only where and as necessary.

The structural glue laminators have expressed concern about standard lumber grades. As a whole these are not suited to laminating requirements although they meet the need for which they were established. Lumber for laminating must meet specifications largely peculiar to its own field. Normal yard lumber, no matter how well up to grade for the uses for which normally manufactured, is subject to re-sorting and re-working before it becomes suitable for structural laminating.

Extensive Re-grading

For structural laminating, lumber purchases are largely restricted to stress grades and strength-graded clears (slope of grain and rate of growth) of one and two-inch thickness in widths up to and including 14 inches. After arrival at the fabricator's plant the stock undergoes regrading and segregation as the initial step in preparing lumber for structural glue lamination.



SEVERAL TYPES of laminated ship framing members prepared for curing.

Moisture Content

The moisture content of lumber at time of gluing is of prime importance in fabricating laminated products. Present specifications prescribe a moisture content range between a minimum of 7% and maximum of 16% and a spread of not more than 5% between several laminations of the same member. Consequently, it's characteristic of fabricators to operate on rather critical dry kiln schedules and closely check moisture content of seasoned boards to eliminate those not coming within acceptable limits. Several methods are used in checking for dry moisture content, including continuous moisture detectors installed in conjunction with dry planers.

Some laminators do not have dry kiln facilities, but buy seasoned lumber kiln dried to the purchaser's specifications.

Additional Surfacing

Seasoned stock can be finish surfaced with or without previous rough surfacing, but in either case the final surfacing constitutes one of the most important processing steps in glue lamination. Structural laminators call for smoother surfacing in their processing than can normally be found in conventional planing mills.

Product quality is, to a large degree, determined by the accuracy and care of the final surfacing of bonding surfaces. To develop glue joints of maximum strength the surfaces to be glued must be cleanly machined without fiber damage and to accurately fit together. Some intentional roughening of wood bonding surfaces has been practiced but tests of joints indicates no benefit results from this technique.*

*Laminating of Structural Wood Products By Gluing, U. S. Department of Agriculture.

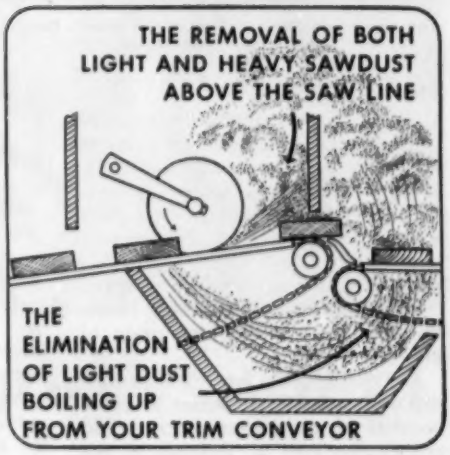
THIS NEW STETSON-ROSS T-33 *TRIMMER USES THE SAME AIR TWICE . . .

Built-in End Printer Available

. . . to remove light and heavy sawdust both above and below the saw line

* Original Patentees of the Selective Random Length Trimmer No. 2,091,647.

The T-33 solves these 2 problems . . .


THE REMOVAL OF BOTH LIGHT AND HEAVY SAWDUST ABOVE THE SAW LINE
THE ELIMINATION OF LIGHT DUST BOILING UP FROM YOUR TRIM CONVEYOR

THE NEW STETSON-ROSS T-33 TRIMMER HAS THESE MERITS

TOP AIR DUCTS JOIN BOTTOM SAWDUST REMOVAL SYSTEM EMERGING AT A SINGLE BLOWPIPE CONNECTION

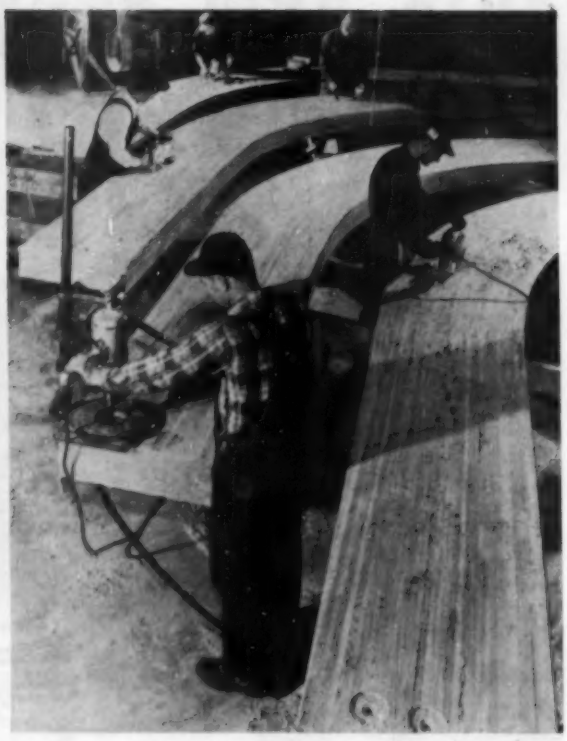
1. An entirely ***new*** concept of blowpipe engineering for removal of sawdust both above and below the saw line.
2. All sawdust is removed by your blowpipe system; thus your trim conveyor does not churn up a fog of sawdust to blanket your planing mill.
3. Only one blowpipe connection is required for the whole job of sawdust removal. The same air does ***double*** duty — removes sawdust above and below saw units.
4. The T-33 is shipped completely assembled with feed works ninety per cent assembled to cut your installation costs.
5. The trimmer enclosure consists of hinged sections which permit easy access to trimmer saw units from above, front or rear without interference by blowpiping.

Write for Details

STETSON-ROSS MACHINE COMPANY
SEATTLE 4, WASHINGTON

Export Division, 301 Clay Street, San Francisco, California

END-TRIMMING KING-SIZE GLULAM BEAM. There are 32 separate laminations of lumber in it.



FINISHING GLULAM ARCHES by sanding, patching and boring, at Rilco's Albert Lea plant.

Much Surfacing

The high quality surface must be retained until the gluing in order to produce strong, durable bonding. Final surfacing just before gluing is recommended and the dressed stock should be protected from moisture changes until used. It's recommended that lumber surfaced at mills and then shipped to laminating plants undergo resurfacing just prior to gluing.

For consistently dependable joints, the difference in thickness in components of glulam members should not exceed 1/64 in. throughout entire length.

End-Jointing

Except for short laminated members, end jointing of laminations is necessary to provide full-length components. Short lengths may be end jointed as a means of wood utilization even for short members. End-joint types include plain scarf, hooked scarf, finger, serrated scarf and others. All require a rather long slope to develop maximum tensile joint strength. The plain scarf, made by planing adjacent ends of laminations to a flat slope, is widely used by structural laminators and is the only end joint made without special equipment. Generally accepted slopes for Douglas fir and Southern yellow pine run 1:12; in oak a slope of 1:15.

End joints may be pre-glued, clamped and cured or they can be formed during the in-line production process. The latter consists of applying glue to one or both slope surfaces, joining the two adjacent ends together and fastening them (usually by wood dowel) just before the member goes through a glue applicator. The length of laminations which can be produced by this method is effectively limited only by size of plant and facilities behind the spreader.

Manufacturers of glulam construction lay out the projects to provide that scarf joints are well scattered throughout a member. However, end joints are avoided in laminations of some sharply curved sections to facilitate successful bending to required radius. Lamination lay-up, for both straight and curved members, takes into consideration species, grades, defects, thickness of components, grain, and position of end and edge joints.

Glue Preparation

Conditions under which a glulam member will be used, primarily determine the choice of glue. Regardless which glue is selected, its preparation and application should be carefully controlled to assure desired results. Glue mixing necessitates accurate measurement of volumes and weights, the use of containers made of materials not affected by constituents of the adhesive, agitator speed such as to provide rapid mixing yet not be so fast as to introduce air into the medium. Some glues require cooling or refrigeration while others need heat.

Essentials for good glue joints call for correct amount and proper spread of the adhesive. Although it's possible to get satisfactory results by applying glue to just one of two mating faces, producers prefer a light coating on both faces. Double spreading insures even wetting of the entire joint surface and generally allows for longer assembly periods than does the single spread.

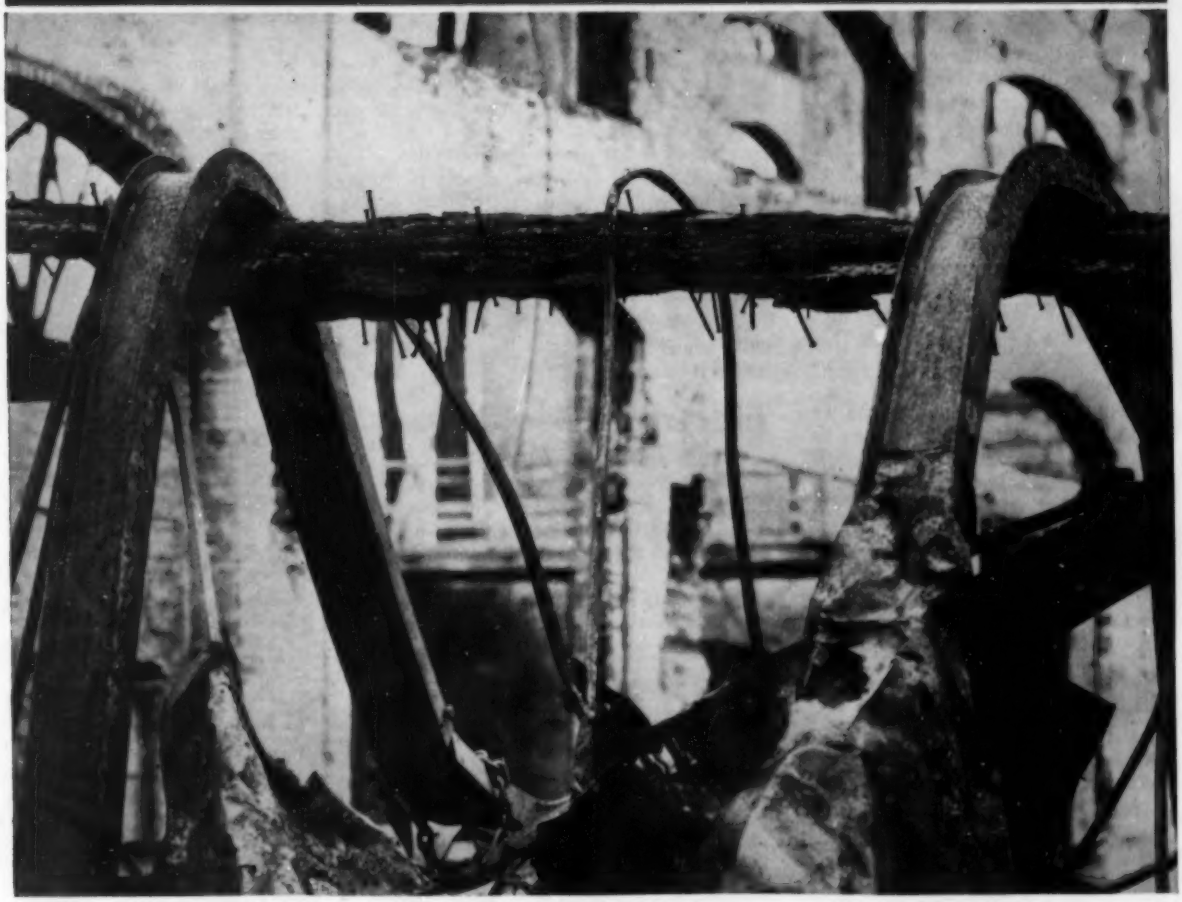
Amount of glue required varies with the species of wood, type of glue concerned and lay-up time. The spread should be frequently checked for quantity and evenness.

Time Control Needed

The elapsed time between application of glue to laminations and the application of pressure should be controlled. The allowable length of the time interval varies with glue types, air temperature, relative humidity, and thickness of the spread.

This story told to American Businessmen in BUSINESS WEEK, Nov. 28, 1953 issue.

ANOTHER APPLICATION FOR *Borden's* INDUSTRIAL ADHESIVES



Fire-resistance—wood vs. steel

Because of combustible powders, the fire in this casein plant at Frankfort, N.Y., was short and hot. Steel roof trusses quickly collapsed. Result—a total loss. But note how this heavy *wood* member, a 12″x16″ nailed, laminated beam, stood up after hours of burning and supported the twisted steel girders.

This beam was installed before the development of today's specialized timber-fabricating plants. A modern glue-laminated member treated or coated with a fire-resistant material would have showed far greater durability. Wood doesn't collapse. It holds until the cross-section is actually reduced to a breaking point by steady flame. It allows *time*—very often time enough to save the structure. That's why heavy, mill-type wood framing earns low insurance rates.

Specify glued, laminated wood for resistance to fire or water, for low cost, low maintenance, and better appearance. We will help you make sure it is properly glued.

If your problem involves gluing, bonding or binding of practically any type of fibre or material, Borden adhesive specialists may be able to help you. Write *The Borden Company, Chemical Division, Dept. L-34, 6010 Airport Way, Seattle 8, Washington.*

THE BORDEN COMPANY

Chemical Division

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ADHESIVES for wood, paper, metal, glass, rubber, plastics • RESINS for foundry cores and molds, wet-strength paper, abrasive and frictional products • DURITE phenolic molding compounds • CASEINS • FORMALDEHYDE

Pressure for good bonding can be applied by various means to form glue into a continuous thin film between the wood surfaces and bring these surfaces into intimate contact, and to hold the laminations in position until the glue sets. Accepted working pressures range between 100 and 200 psi. for softwoods and 150-250 psi. for dense hardwoods.

For glues setting at room temperature hydraulic or screw presses may be used in making straight members. Retaining clamps find preference in gluing curved members as pressure must be progressively applied along the assembly to allow slippage of the laminations. When using glues requiring heat for curing, the assemblies must be kept under pressure and moved to a curing chamber. This calls for the use of portable presses or clamps.

Various types of glues have different curing specifications, both as to time and temperature. Some will cure at ordinary shoproom temperature, others at slightly elevated temperature, and others up around 200° F.

Curing Curved Members

In that curved members are formed by clamping them around jigs, the curing of curved members is complicated in that space must be available for the jig as well as the member and clamps.

Heated curing chambers, preferably insulated and vapor-tight, are used for curing laminated units at relatively high temperatures. These should be equipped with vapor or steam sprays for controlling humidity, and heating facilities capable of bringing the chamber to desired temperature within one or two hours.

Curing chamber facilities and processes are similar to those of regular modern dry kilns. Some laminators use their kilns for both seasoning lumber and curing glulam members.

Electronic Heating

Of the several types of heating available, electronic heating has such different characteristics it deserves specific mention. Assemble laminations placed in an RF field heat rapidly throughout the mass — rather than from the outside toward the center. By applying the RF field parallel to the glue line it will be heated without materially increasing temperature of the adjacent wood.

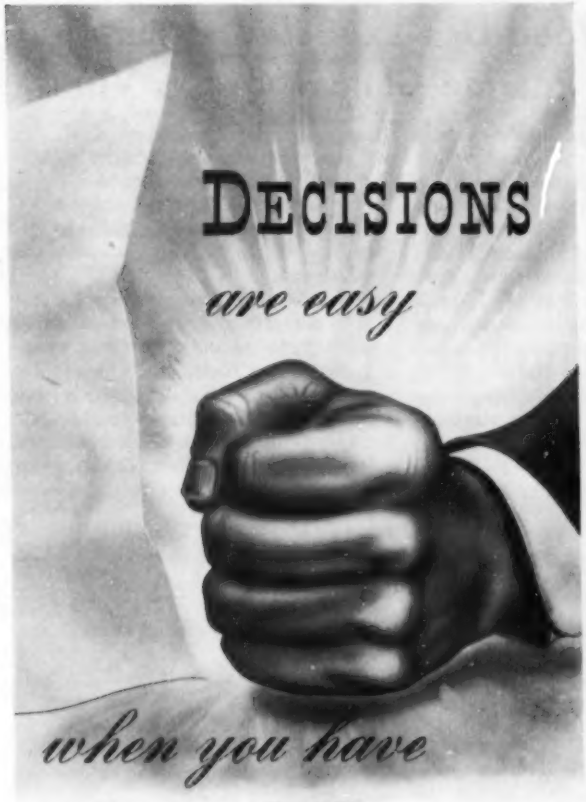
In the glulam field high-frequency heating probably finds widest application in the production of curved rafters — a mass production stock item. RF heating has considerable application in manufacture of plywood, furniture items and edge gluing.

Not only do extensive engineering detail and precision manufacturing have prime roles in glulam construction, but the finished product receives judicious care right up to the point of end use. The laminating industry has gone to considerable effort to protect the appearance and quality of glued arches when being shipped and during erection. An asphalt-lined paper wrapping protects the wood members from sun, rain and dirt so that, when desired, the clean, natural finish of the wood can be retained in finishing the

Characteristics, preparation, and uses of glues adaptable to structural glued lamination—excerpted from Table 2 of Glued Wood Construction, U. S. Forest Products Laboratory, to be published as a separate of Wood Handbook.

Class	Form and testing	Properties	Preparation and application	Uses
Casein and vegetable protein	Several brands sold in dry powder form; may also be prepared from raw materials by user; quality determined by tests on glue and by tests on wood joints.[1]	High to low dry strength; moderate to low water resistance and moderately durable under damp conditions; pronounced dulling effect on tools; stain some woods badly.	Mixed with cold water; applied and pressed cold.	Used for gluing lumber and veneer for purposes requiring moderate moisture resistance.
Urea-resin	Several brands sold as dry powders, others as liquids; may be blended with melamine or other resins; quality determined by tests on glue and by tests on wood joints.[2]	High in both wet and dry strength moderately durable under damp conditions; moderate to low resistance to temperatures in excess of 150° F; white or tan in color; stain wood very slightly if at all.	Dry form mixed with water; hardeners, fillers, and extenders may be added by user to either dry or liquid form; applied at room temperatures; some formulas cure at room temperatures, others require hot pressing at about 250° F.	Used extensively in gluing veneer for furniture and other interior uses and to some extent in gluing lumber and assembly joints.
Melamine-resin	Comparatively few brands available; usually marketed as a powder with or without catalyst; quality determined by tests on glue and by tests on wood joints.[4]	High in both wet and dry strength; very resistant to moisture and damp conditions; more resistant than wood to high temperatures; stain wood very slightly, if at all; white to tan in color.	Mixed with water and applied at room temperatures; heat required to cure (250° to 300° F.)	Used to a limited extent in bag molding and in gluing lumber and veneer for purposes requiring colorless and highly resistant glue lines.
Phenol-resin	Several brands available, some as dry powders, others as liquids, and one as dry film; quality determined by tests on glue and by tests on wood joints.[3]	High in both wet and dry strength; very resistant to moisture and damp conditions; more resistant than wood to high temperatures; stain wood very slightly; dark red in color.	Film form used as received; powder form mixedi with solvent, often alcohol and water, at room temperature; hardeners, and fillers often added by users; most common types require hot pressing at about 300° F.; formulations curing for longer periods at 140° to 210° F. are available.	Used primarily for production of highly resistant plywood; lower-temperature-setting types used in gluing lumber for severe service.
Resorcinol-resin	Several brands available in liquid form; catalyst supplied separately; some brands are combinations of phenol and resorcinol resins; relatively high priced; quality determined by tests on glue and by tests on wood joints.[4]	High in both wet and dry strength; very resistant to moisture and damp conditions; more resistant than wood to high temperatures; stain wood very slightly; dark red in color.	Mixed with catalyst and applied at room temperatures; resorcinal glues cure at room temperatures; some resorcinol-phenol blends cure best under moderate heat (100° to 200° F.).	Used primarily for gluing lumber or assembly joints that cannot be heated conveniently and that must withstand severe service conditions.

Federal Specification C-G-451. Glues; animal. 1931.
[1] Federal Specification C-G-456. Glue; casein. 1941.
[2] Federal Specification C-G-496. Glue; urea-resin type. 1946.
[3] Military Specification MIL-A-397A. Adhesive, room-temperature and intermediate-temperature setting, resin (phenol, resorcinol, and melamine base). 1951.



ALL THE FACTS

and that is true in forming an accurate judgment on the trimmer of your choice. Write or phone IRVINGTON before you buy — it will cost you NOTHING to get ALL THE FACTS about an IRVINGTON TRIMMER and why it costs no more to buy the best.

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THE HUSS CHRONICLE

From the files of

THE LUMBERMAN, MARCH, 1924

A report from Washington, D. C., indicated that England imported 35,058,910 sq. feet of plywood from the United States in 1923 compared with imports of 13,324,182 in the previous year. The report stated that United States Plywood was more popular in England than made in Europe and that British buyers were willing to pay a premium for it.

John Snyder, head of the Clear Fir Lumber Co., and one of the northwest's pioneer Douglas fir door manufacturers, died. A son, Frost Snyder, who has been associated with the business, survives.

The Kelso Veneer Company, Kelso, Washington, is specializing in the production of special face veneer stock. The company has obtained some million feet of old growth yellow fir peeler logs from Apiary, Oregon.

The Washington Door Company incorporated at Tacoma, Wash., for $200,000 by August von Boeckling and J. E. Burkey. The company plans to manufacture fir doors using Douglas fir plywood panels.

A company known as Skenna Laminated Woods Ltd., announced plans to build a plant at Prince Rupert, British Columbia. The company plans to use cottonwood as it major raw material, but other woods including birch will also be employed.

N. H. Larson, of Port Orford, Oregon, a Port Orford cedar operator, has equipped his mill with veneer machinery and expects to produce more than a million square feet per year.

• • •

So much for the past . . . In the Future, Try

• • •

Huss Lumber - Huss Plywood

HUSS LUMBER COMPANY

1350 West Fullerton Avenue CHICAGO 14, ILLINOIS

woodwork. The use of sealer or paint coatings gives further protection of the wood from atmospheric moisture changes in service.

What Is Needed to Go Into Production

Outline of typical facilities and equipment for producing structural glulam:

Green lumber—unloading area, sorting-grading chain, storage area, transport and handling equipment;
Dry kilns;
Dry Lumber storage—enclosed and preferably heated;
Sawing & jointing—straight-edge rip saw, gang trimmer or trim saws, band resaw;
Surfacing equipment—rough planer (either single or double), precision planer, matcher or cabinet surfacer (preferably double);
Edge & Scarf joint gluing—hand clamps, clamp carriers, piling clamps, etc. for edge gluing, planer, shaper, tennoner, milling head, etc. for scarf joints and pressure equipment such as hydraulic or screw presses, and clamps;
Glue storage, mixing spreading—dry, cool (and possibly refrigerated) storage, glue mixing facilities, glue spreader of the type adaptable to the operation;
Forming and pressing—jigs, beds and fixtures as determined by the products to be manufactured, equipment for handling heavy members (cranes, joists, dollies, trucks, fork lifts, etc.), presses and retaining clamps;
Curing chambers;
High frequency machine for rapid glue curing;
Knife and saw sharpening equipment;
Timber sizer, portable planer, and sanders for processing laminated members;
Trimming, boring, patching and plugging equipment;
Wrapping, crating and shipping facilities.

Extensive engineering essential to the manufacture of structural glulam does not become evident in a physical inventory of such an operation.

Edge Gluing

Although some parts of the forest products industry pre-suppose the term "glued lamination" to be restricted to laminations of parallel grain, other types of glue-up are so closely allied with the glulam field that these deserve at least casual mention.

Edge gluing fits into some glulam organizations so effectively that it becomes an integral part of production. This means of "making wide ones out of narrow ones", is, however, far from confined to the structural laminators. Applications can be found ranging from baby cribs to caskets in consumer items, from bungalow siding to finished floors in home construction, from carrier blocks to truck bodies in the industrial field. Lumber is subject to edge gluing from the time it leaves the sawmill until reaching the end purchaser—and even he may get into the act.

Adhesives

Advancements and developments in the field of adhesives of recent years, the last 10 years in particular, have extended the versatility of wood to the extent that it can be strengthened, bent, and utilized to a degree not even considered just a short time ago.

The adhesives principally used in structural glulam:

Casein, the leading glue in this field, comes in powder form for mixing with water at time of use. It is water-resistant, self-bonding, sets at above-freezing temperatures and can be obtained with preservative additives inhibiting bacteria and mold formation.

Melamine-urea, phenolic and resorcinol resin adhesives have come into use for waterproof construction as result of much experimental and development work during past few years. By applying these glues under proper conditions glue bonds can be produced that are apparently unaffected by water, decay organisms, temperature extremes, wood preservatives and termites.

Greater Wood Use Expected in Future In Field of Marine Glulam; Oak Is Vital

Continuing advances were made during 1953 in the construction of glulam structural members in the marine field, which was made possible as a result of recently developed waterproof adhesives and has progressively accelerated during the years since War II. Here is another industrial application where wood was chosen because it has essential characteristics unavailable in other readily obtainable structural materials. Glulam holds a strategic position in the wooden boat-ship building program, now a "near-billion-dollar" industry in this country.

The latest technological advances reported to THE LUMBERMAN by USN's bureau of ships show that even greater use of wood can be expected in the future. In terms of utilization, the amazing total of 30 million board feet of white oak alone is indicated.

Tests in Treating

In that many laminated boat and ship members are of size and shape making preservative treating by pressure-cylinder impractical, the bureau turned to other treating means. It does not consider brush or soak treating good enough for the anticipated 30-year service life and has turned to treating prior to laminating on trial-test basis. Performance of units so constructed will be closely observed and the laminating-after-treating technique is expected to be extensively adopted if results come up to anticipations.

Specifications based chiefly on laboratory results have been developed by the bureau to laminate treated oak. The results are expected to approximate in quality non-treated white oak.

Successfully treating ship lumber with preservative prior to laminating offers promise of longer life, lower maintenance costs, and opportunity for utilizing some species which have previously not been acceptable. At present the only species laminated for naval vessels are Douglas fir, white oak and teak.

Wide Use for White Oak

The durability and superior structural characteristics of white oak adapts the species to wide marine usage, including patrol and landing craft, auxiliary transports, minesweepers, salvage and rescue vessels up to nearly 200 ft. in length; and small laminated wooden boats up to about 65 ft. in length.

Detail laminating specifications for Douglas fir and white oak ship and boat members are set forth in the following: Bureau of Ships, Navy Department 1950. Military Specification MIL - F - 2038, Washington, D.C.; Bureau of Ships, Navy Department 1950. Military Specification MIL-O-15154, Washington, D. C.

Results of studies have indicated that red oak treated with chemical preservatives can be successfully utilized in at least certain types of marine applications.

No. of Workers, and Value of Production for Lumber & Wood Products Industries in U. S. (Including logging & sawmills)

by Region

	No. Employees	[1]Value Added by Mfr. (Thousands of dollars)
New England	38,829	144,406
Middle Atlantic	43,333	183,170
E. North Central	77,965	398,594
W. North Central	28,485	126,759
So. Atlantic	178,590	557,775
E. So. Central	105,335	315,678
W. So. Central	78,407	255,384
Mountain	29,674	167,059
Pacific	189,895	1,374,352
TOTAL	770,515	3,523,177

Source: Department of Commerce, Survey of Manufacturers.
[1]Value of product less cost of materials, supplies, fuel, electricity and contract work.

DOW BRUSH KILLERS simplify brush control on forest roadways

Brush control with Esteron Brush Killer or Esteron 245 minimizes danger spots on turns.

Chemical spraying keeps brush forced back to give full road width with better vision.

Esteron® Brush Killer and Esteron® 245, widely used to control brush and trees along logging roads, switchbacks, access roads and communication lines, greatly lessen the need for slashing and bulldozing. Where manual cutting is practical, spraying fresh-cut stumps with either of these hard-hitting Dow brush killers prolongs its effectiveness by keeping stumps from resprouting.

Esteron 245 is a straight 2,4,5-T ester formulation. Esteron Brush Killer combines the action of low-volatility propylene glycol butyl ether esters of 2,4-D and 2,4,5-T. Both have proved their worth in year-around basal bark spraying and frill application on hardwoods. You are invited to write for information on these Dow brush killers for easier maintenance of forest roadways and also for timber stand improvement by selective treatment of weed trees. THE DOW CHEMICAL COMPANY, Agricultural Chemical Sales Department, Midland, Michigan.

you can depend on DOW AGRICULTURAL CHEMICALS

GLULAM
How Marine Lamination Grew
from a "substitute" for scarce solid material into the industry now producing vastly superior timbers

by O. HARRY SCHRADER, Jr.
Vice-president, United States Plywood Corp. (Washington)

(Dr. Schrader and his working associates during World War II performed highly important work for the government that will have a much farther reaching effect than its contribution to the war effort. Techniques, equipment and information developed by these men primarily for boat-building purposes has since been applied to many other phases of lamination and has contributed substantially to more prosperous forest industries in America.—Editor.)

Early in World War II, the United States Navy and its boat-building contractors encountered severe shortages of critical materials required for a greatly expanded program of building small wooden craft such as whale boats, rescue craft, minesweepers, personnel boats, etc. The scarcity of suitable white oak, traditionally the preferred species, for keels and other structural boat parts was particularly critical. Not only was material of suitable quality scarce, but the long time involved in seasoning and processing heavy members delayed essential boat building programs.

To alleviate this serious condition, the Office of Production Research and Development of the War Production Board sponsored a program to develop techniques of laminating timbers for marine use and to find suitable substitutes for white oak for boat building purposes. Two pilot plant programs financed by the War Production Board were established for this purpose, one in early 1943 at Gamble Bros., Louisville, Kentucky, and the second later that year at Timber Structures, Inc. in Seattle, Washington.

The entire program was a cooperative venture with the United States Navy, the War Production Board and the Forest Products Laboratory, at Madison, Wisconsin integrating and supervising the experimental and developmental programs.

How Gluing Developed

Laminating of marine timbers was made possible by the development of resorcinol and phenol-resorcinol blend adhesives in the early 1940's. Previous to this development, the only waterproof adhesives available were the phenolic resins which required prohibitively high temperatures for conversion to the insoluble waterproof state. While these temperatures could be attained in thin flat sheets of plywood in steam heated presses, the slow conductivity of wood made it impossible to accomplish the same result in members more than one inch thick without seriously checking the wood and deteriorating its strength properties.

Early test work at the Gamble Bros. plant resulted in determination of an adequate curing schedule for the first acceptable phenol-resorcinol blend resin on white oak. This schedule required that the innermost glue line be heated to a temperature of 190° F. and maintained at this temperature for a period of ten hours. As more information was developed, it was found that lower temperatures and shorter time cycles could be used with other species such as Douglas fir.

The necessity to meet this type of curing schedule required construction of curing chambers resembling dry kilns. They differed from dry kilns principally in the ability to maintain very high humidities for prolonged periods of time. Since most of the lumber employed for laminating is kiln dried to moisture contents of 8-15%, humidities up to 90% were required to prevent drying out and checking of the wood during the curing run. Temperatures of the innermost glue lines were measured by thermocouples and curing schedules adjusted accordingly.

LAMINATED KEEL for 43-foot fishing boat notched for laminated frames.

Overcoming Prejudice

During the early phases of operation of the Timber Structures' pilot plant, the most difficult problem to overcome was the prejudice on the part of boat builders against laminated material. Most builders were accustomed to using cold-set urea glue for noncritical parts of the boat structure but had little or no confidence in a glued laminated keel, stem or transom that would be in continuous direct contact with water. Strenuous efforts were made to interest boat builders in the reliability of laminated marine timbers by building sample structural boat members to order for trial and by making exhaustive accelerated exposure tests on other samples. Officials at the Puget Sound Navy Yard

at Bremerton, Wash., were interested in the program and subsequently develped an excellent laminating shop and program of their own. All repair and new construction of small wooden boats at this Navy Yard have their genesis now in laminated structural members.

The slow development of interest and confidence by boat builders caused the pilot plant program to expand into other fields of wood construction that were important to the war effort and were severely hampered by the lack of suitable structural timbers.

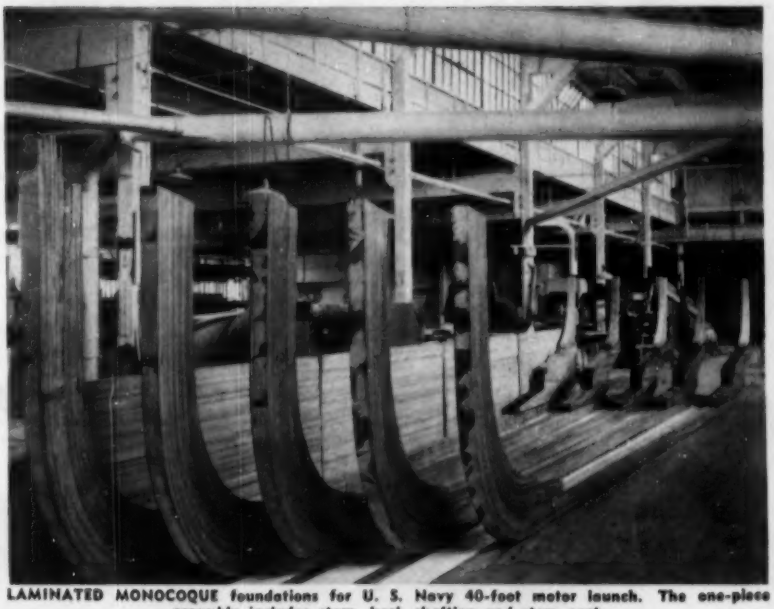
Use for Elevator Guides

Among the many products that were produced experimentally as laminated timbers during 1944-45 were rub guard for barges, railroad bridge stringers, mine elevator guides, light and heavy cross arms for utility poles, beach pole markers, ladder rails, stage planking, keel blocks, gun mount platforms and radar masts.

Mine elevator guides (used to guide freight and passenger elevators in mine shafts) represented an entirely new development in glued-up timbers. These guides measuring 4″x6″x15′ and 5″x9″x15′ must be of clear straight grained material when solid and must be carefully seasoned. The narrow face must be vertical grain, since the elevator shoe is constantly wearing this face away as the cage moves up and down at a high rate of speed. The laminated guides were made up of four or five pieces of clear net one inch thick kiln-dried western larch. The grain of the inner laminae were crossed at right angles to each other and at 45° to the face laminae, thus exposing some end grain on the narrow face to increase wear resistance to the shoe. This procedure produced a superior guide in service life, conserved material and saved considerably on replacement costs.

Superior Qualities Appreciated

As the pilot program proceeded boat builders learned to accept laminated timbers and eventually to appreciate their superior qualities when compared to solid timbers. Shortly before the conclusion of the program in December 1945, twelve 43-foot fishing boats were built in Seattle with all structural members such as keels, sterns, clamps, deck beams, sponsons, bilge stringers, bulwarks, coamings, frames, etc. of laminated Douglas fir or white oak.



LAMINATED MONOCOQUE foundations for U. S. Navy 40-foot motor launch. The one-piece assembly includes stern, keel, shaftlog and stern post.

A number of small Navy boats were built by contractors using monocoque foundations (one-piece stern, keel, shaftlog and sternpost assemblies) of laminated white oak.

Other activities of the pilot plant program included development of equipment for scarfing laminae, presses, adjustable jigs, etc. Research was carried on to develop strength properties of laminated timbers, effect of preservative treatment on glued timbers, high frequency gluing techniques, steam bending glued members and related subjects. An extensive program was carried on with the Forest Products Laboratory in gluing up test beams to study the effect of combining various lumber grades most advantageously in a laminated beam for economic and structural purposes. Other studies related to permissible spacing of scarf and edge joints in conjunction with rated working stresses for laminated members.

Public Acceptance

With the cooperation of the Forest Products Laboratory, several laminating schools were held to pass along the results of the pilot plant work. Attending these schools were engineers, inspection personnel, Navy Yard personnel, building officials and production personnel from boat yards and woodworking shops.

A complete history of the two-year program was subsequently published by the War Production Board.

Unquestionably this development work hastened the general acceptance of laminated timbers that now occupy such a vital part in retaining and securing more markets for structural timbers. At first a substitute, they are now accepted as a vastly superior product than solid timbers—carefully engineered, dry, light in weight, durable and formed to designers' plans. Above all, the wood-using public no longer doubts the lasting qualities of the glues that bind the laminated member.

Structural glued lamination products provide builders with materials that (1) do a better job, (2) are less expensive, (3) can be installed or erected economically, (4) are not otherwise immediately available—if available at all by *any other means*.

Canadian Laminators Form National Group

The Canadian Institute of Timber Construction, to be affiliated with the organization in the United States of similar name, has been formed in Canada and it will serve as the national association of laminated structure producers and engineers. The president is D. D. Millar, Laminated Structures, Montreal; vice-presidents, R. F. DeGrace of Timber Structures, Peterboro and Vancouver; and William Thornber, British Columbia Lumber Manufacturers Association; secretary-treasurer, W. Nicholson, Burlington, Ont.

ReZon

is now called CreZon

This high-quality plastic surfacing material for plywood has a new name!

ReZon, the plastic overlay for plywood has been re-christened. The letter "C" has been added to more closely identify this product with its manufacturer, the Crown Zellerbach Corporation. The name is different, but the product is the same . . . a phenolic resin-cellulose fibre sheet created by Crown Zellerbach's research scientists.

CREZON...the plywood with a plus

This overlay has now been thoroughly tested throughout America. It is adaptable to either large or small scale operations. It has been *production* proved and *sales* tested.

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For additional information write Dept. A.

CROWN ZELLERBACH CORPORATION
343 SANSOME STREET, SAN FRANCISCO 19, CALIFORNIA

1953 was Biggest Year in History

for Douglas fir plywood up 20% over record 1952

Contrary to earlier estimates, total fir plywood production in 1953 was 3.67 billion square feet (⅜" basis), a thumping full 20 per cent ahead of 1952's previous all-time record high of 3.05 billion feet. This year the industry hopes to sell as much as 3.9 billion feet.

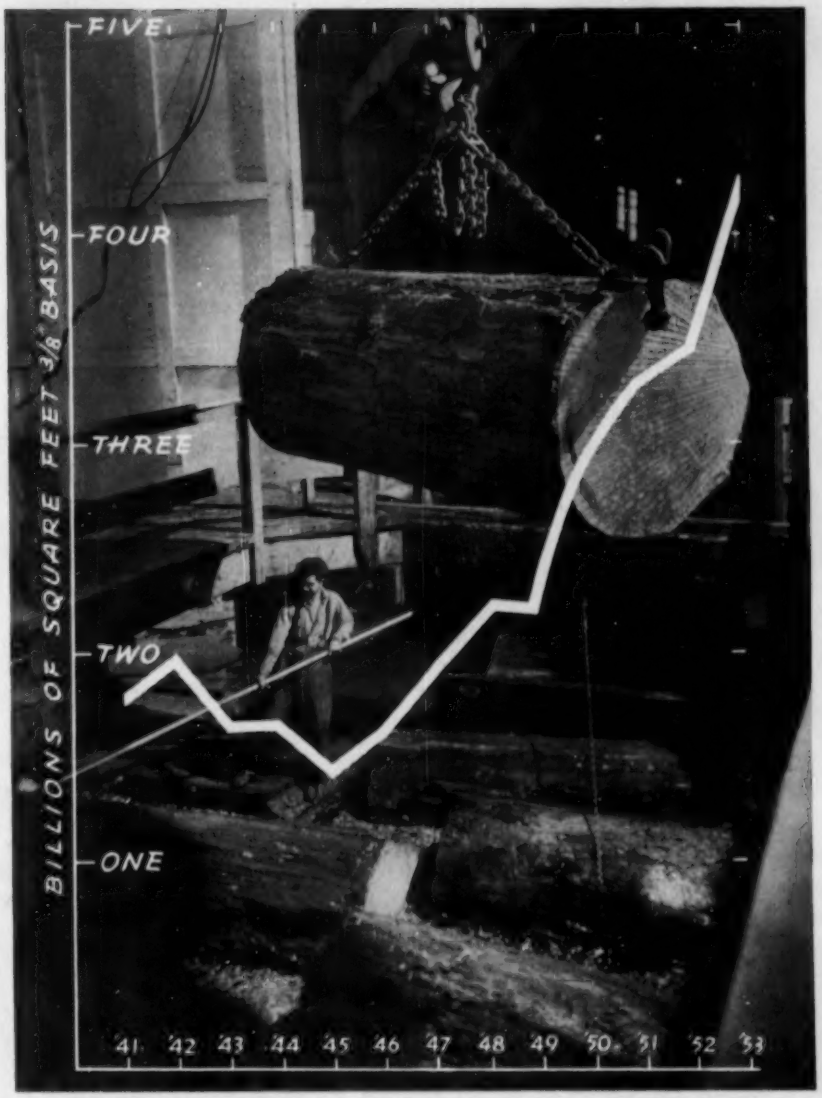
According to industry leaders, it can be done. This sales figure would give the mills a comfortable, profitable production ratio since the 5-day capacity of the industry is estimated at just slightly above that figure.

To do it, the industry will have to create an additional 8 million sq. ft. of business a week. Plans call for development of a selling force that will maintain fir plywood as a growth industry. Except for the war years, fir plywood consumption has been up every year since 1937. Assuming economic forecasts of a "near record gross national product" in '54 are correct, the plateau is there from which to build.

Per Capita Consumption Up

One of the reasons for optimism is the fact that plywood sales have consistently climbed faster than the national economy and the markets in which plywood is sold. For example, total housing starts reached their peak of 1.4 million in 1950. Since then they have declined to just over a million. During the same period, annual production of plywood climbed from 2.6 billion feet to the current figure for '53 of 3.67 billion feet. (See growth record chart.)

The expansion of the industry is most dramatically represented by the phenomenal increase in per capita consumption of plywood in the last seven years. In 1946, it was only 10 feet. Last year the industry sold 23 sq. ft. for every man, woman and child in the country. The increase has taken place despite a substantial rise in the population during that period. (See table of per capita consumption.)



DOUGLAS FIR PLYWOOD PRODUCTION. Above values are for the combined production of the United States and British Columbia.

Plyscord Use Has Tripled

Although sales of all grades have necessarily increased over the same period, the most striking rise has been in the consumption of Plyscord, the structural grade of fir plywood. Prompted by industry promotion demonstration the cost economies inherent in plywood construction of homes, schools, buildings and other structures, sales of sheathing have skyrocketed from a paltry million feet in 1949 to 895 million feet in 1953. The score on this grade has, in fact, tripled. (See table.)

Levitt Brothers, Inc., the nation's largest builders, report, for example, that plywood wall and roof sheathing saved 40 man hours per house on some 8,000 units in Levittown, Pa. Another big builder in St. Louis figures plywood sheathing economics in dollars—$87 per unit.

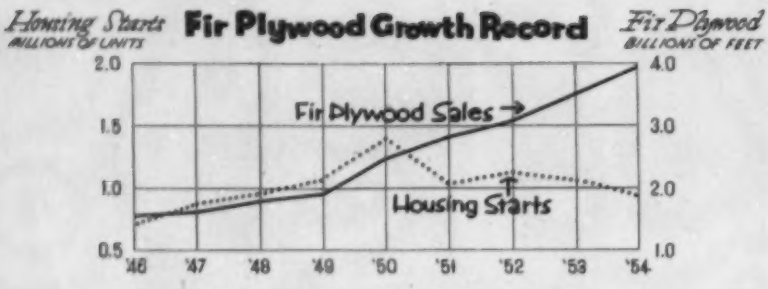
Meanwhile, the expansion of the industry makes possible heavier expenditures in market development and sales promotion without significant increases in the ratio of promotion expenditures to total sales. In 1938, for example, joint industry promotion took better than one per cent of estimated sales at mill level. Last year, joint industry promotion expenditures amount to just over ¾ of one per cent of gross sales.

"The Year of Education"

Today, the industry looks to 1954 as "the year of education" in which

(Continued on Page 109)

PLYWOOD



Promotion To Fill the Gap Between Production and Sales; 3.9 Billion sq. ft. is '54 Goal

Promotion in 1954 by the western fir plywood industry has been keyed to one primary goal—sales this year of 3.9 billion feet. The manufacturers have already made a good start. To date, production which accurately reflects sales has averaged 72 million feet weekly. Total sales this year are 621 million feet, about 8 per cent ahead of last year.

The key of the 1954 sales promotion program is to first create greater consumer acceptance and lead plywood customers into retail lumber yards. Second, the industry will tell and show dealers why they will profit more by carrying complete stocks, including ample exterior plywood.

The industry looks to its joint sales promotion, to its own salesmen and to the nation's distributor and jobber selling force to step up turnover of dealer stocks. Advertising to consumers will make an estimated 500 million impressions in the pages of 89 magazines in the year ahead in a concerted effort to build fir plywood into a household word.

Salesmen Without Order Books

Field promotion activities have been substantially increased and the field force which renders technical advice and promotional help in the field is being about doubled. Industry representatives will make 24,000 sales-building calls this year with a high percentage of key specifiers influencing volume sales not ordinarily reached by actual salesmen—architects, industrial designers, key specifiers. Within a few months, there will be at least 25 men traveling the country as plywood salesmen without order books building plywood markets.

Throughout the year there will be a continuing flow of new merchandising aids continuing the highly successful program introduced in 1953. Among them is a brand new combination plan center and handy panel rack. The new self-service handyman's center for retail lumber yards is intended to exploit a fertile field—23,000 lumber dealers who do not have such a display.

Among the 4,000 dealers who are using the current self-service handy panel rack are many who feel this is one of the best merchandising ideas they have ever seen. They report the rack has "jumped sales of small panels 100 per cent" . . . "doubled pick-up sales of all items including plywood" . . . "sold four racks full a week".

Now being introduced at the nation's 28 major lumber dealer conventions is another imaginative selling tool for fir plywood. It's a 3-D viewer for dealer counters which will show customers beautiful, full-color three-dimension views of seven smart plywood built-ins. The idea kicks off another merchandising program that will bring dealers sales-starting "how-to" plans for plywood storage projects in sets of seven throughout the year.

TV Promotion Expanding

The new plans which include furniture, work centers, storage ideas, kitchen cabinets and other items in strong demand by home-owners will also be used as the base on which to build a sharply expanded publicity effort.

Meanwhile, plans for some form of television promotion are rapidly crystallizing. A television film produced last year for free use has been shown on more than 30 per cent of all the nation's TV stations and the producers are sure that eventually it will be handled on a free basis by more than 50 per cent of the stations.

A new and improved film that should meet with even wider acceptance is in the final stages of production. At the same time plans are being readied for the production of a continuing TV program that would be sponsored on local stations by lumber dealers and/or jobbers working singly or in cooperation.

Close Work With Dealers

Ample evidence exists to indicate a desperate demand by local advertisers handling fir plywood for a top-notch program of this nature.

An entirely new ad mat service, also in high demand by dealers, is being readied. This is closely keyed to national themes being coordinated by the National Retail Lumber Dealers Association. Plywood ads run by local dealers with industry mats will reflect the national association's coordinated program designed to concentrate attention on home improvement.

Throughout all the industry's promotion, greater emphasis than ever before will be centered on promoting the idea of more storage space with fir plywood. The need for adequate storage space is universal and growing. New literature and plans will support this approach.

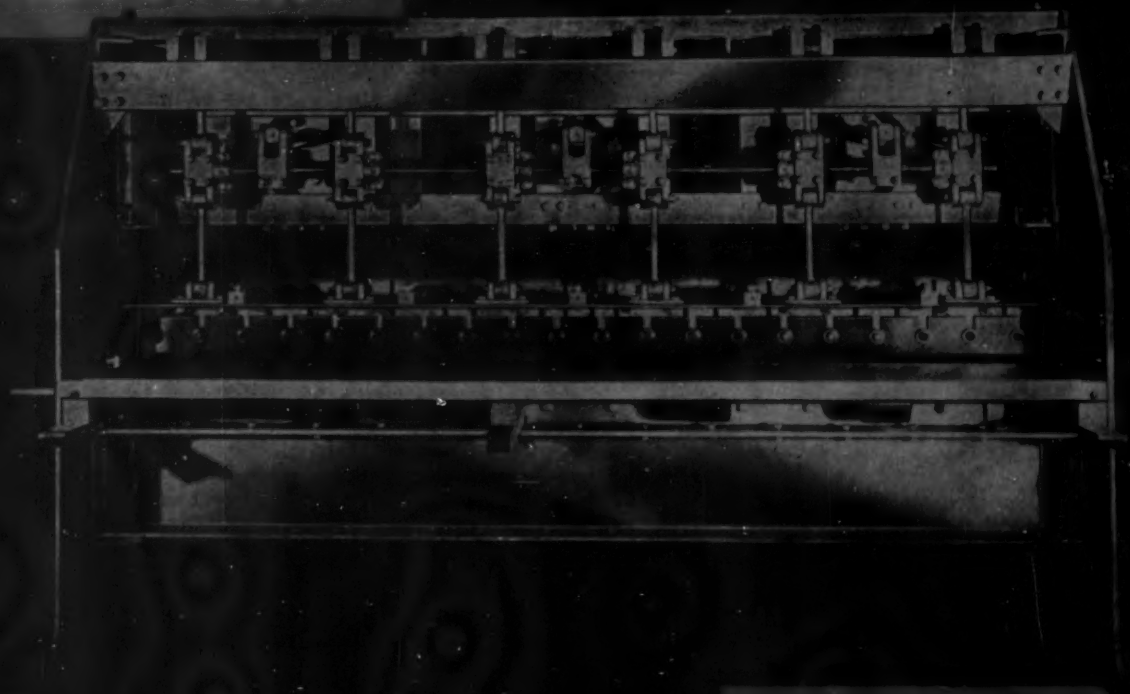
But equally important and perhaps more basic is the manufacturers' concentration this year on better communication and education between all segments of the industry from mill to dealer. Spearheading this program is publication of "Fir Plywood Dealer News", a monthly

(Continued on Page 104)

BETTER MERCHANDISING METHODS DEVELOPED IN '53, such as this mock-up of combination plan center and self-service handy panel rack. This permanent self-service display is intended to exploit fertile field of 23,000 dealers who don't yet have racks. Dealers using current displays report such things as doubled small panel sales, sales of four racks full in a week.

GREATER VENEER RECOVERY

Achieved with the
ELLIOTT BAY SEMI-AUTOMATIC CLIPPER



FOR ALL VENEER OPERATIONS

Greater efficiency in veneer cutting is introduced by the Elliott Bay Semi-Automatic Clipper, proved by years of successful operation in many Douglas fir, pine and hardwood plywood factories.

Plant space is conserved as long storage trays are unnecessary; the Elliott Bay Clipper can be short-coupled to the lathe, with which it is synchronized at lathe speed.

Tearing of veneer is eliminated, thus saving raw material; the clean-cutting clipper knife operates against a long-lasting copper shear bar.

Push button controls afford accurate selectivity of veneer of varying widths. The advanced and tested Elliott Bay Clipper is of all-steel, precision construction. Ease of installation and minimum upkeep demonstrated repeatedly.

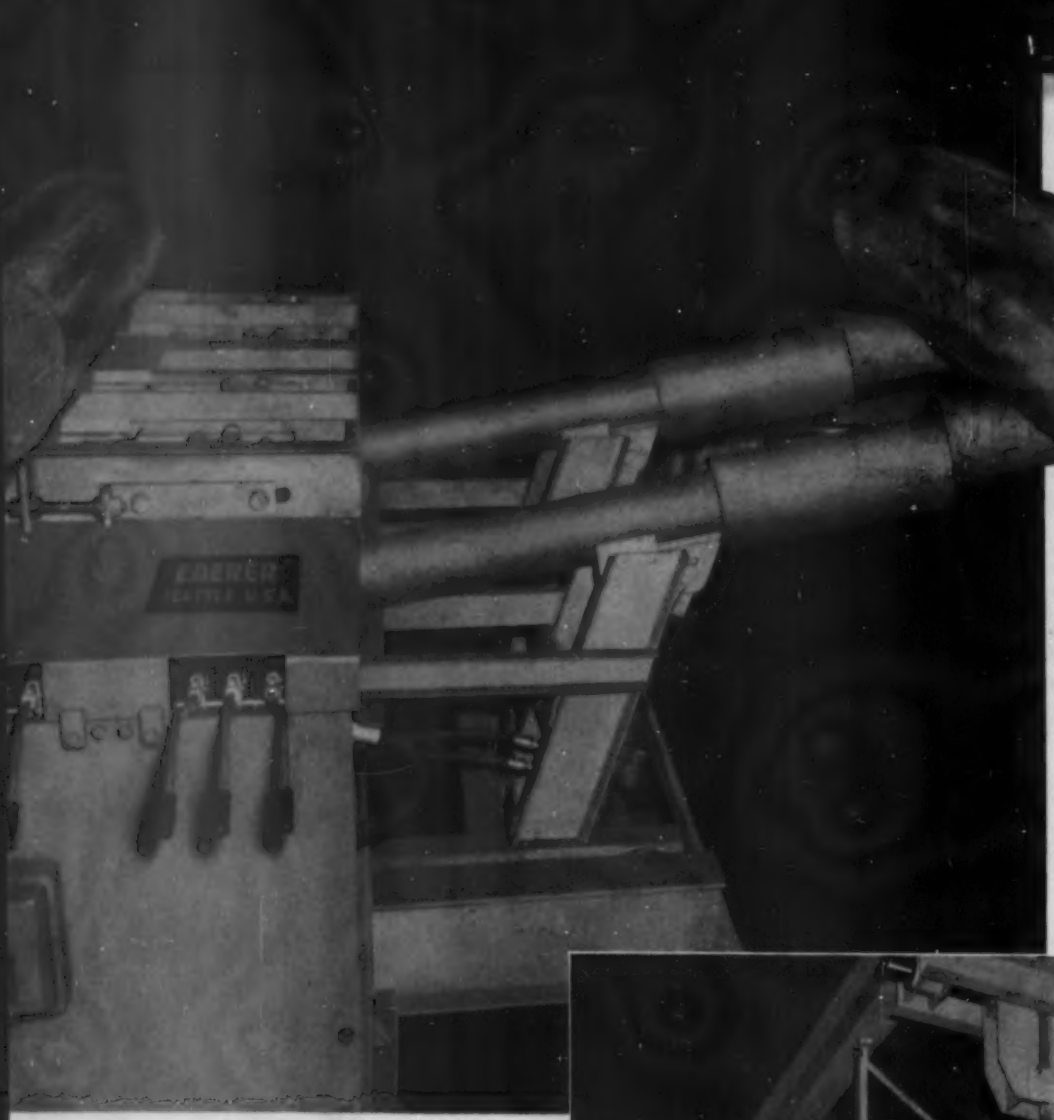
SAVES SPACE
FAST-ACTING
ACCURATE

ELLIOTT BAY PLYWOOD MACHINES COMPANY

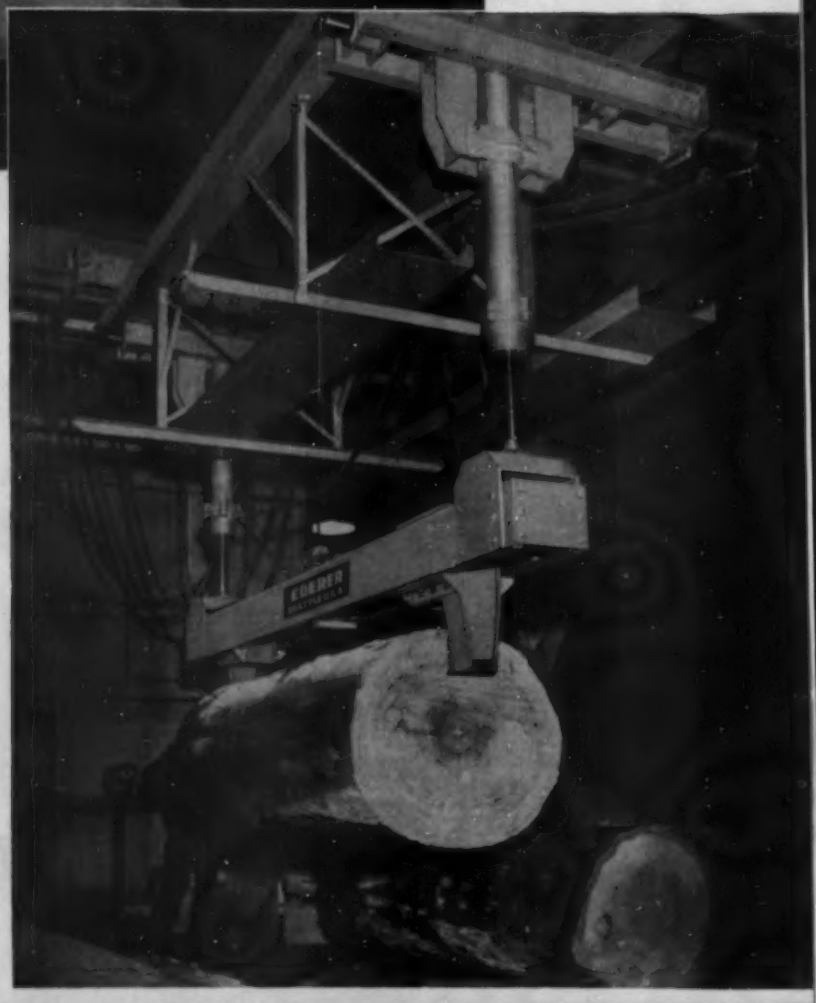
600 West Spokane Street, Seattle 4, Washington

Sales Representative: WIENKER MACHINERY CO., Maritime Bldg., Seattle 4, Washington

YOUR



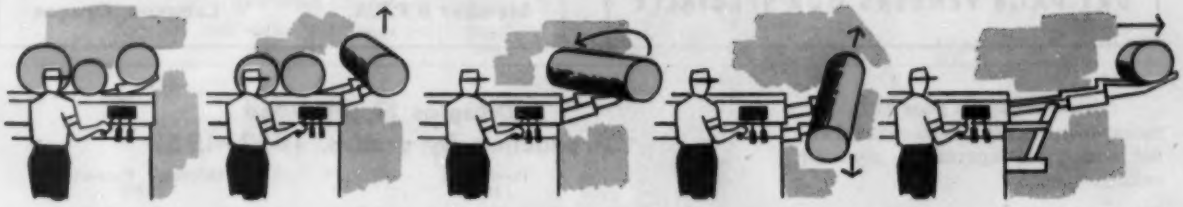
FLOOR MOUNTED LATHE CHARGER is designed particularly for use where overhead clearance is restricted and reasonable floor space is available for operation.



OVERHEAD LATHE CHARGER has the advantage of operating where floor space is limited and is designed for use where overhead clearance is no problem.

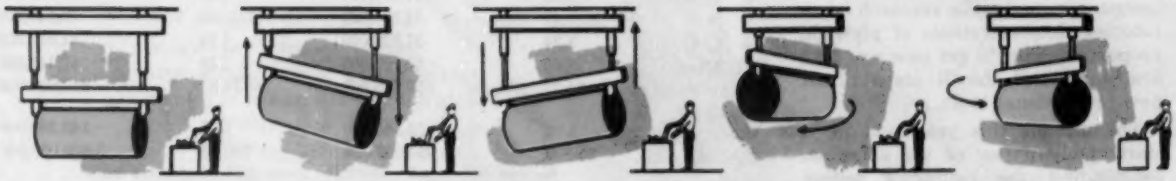
Choice of ways to load your main lathe *Fast*

New floor mounted charger picks up, centers, loads and returns in only 60 seconds



With the development of this new EDERER floor mounted main lathe charger, you now have the choice of speedy lathe-loading by either of two methods—this new floor mounted charger or the EDERER overhead charger. Either will handle a peeler in 60 seconds from pick-up position to return to "ready." Peeler moves forward on storage table to charger cradle—is picked up—pre-centered to lathe chucks, using gunsight projectors—moves forward to exact lathe chucking position—returns to pick-up position as soon as peeler is chucked. Entire operation is hydraulic, from one set of controls, located for the operator's convenience.

Overhead lathe charger also has a 60-second loading cycle



As with the floor mounted charger, during the overhead charger's 60-second cycle, there's no time wasted jockeying peeler into position—and lathe is stopped only long enough to release core block and chuck new peeler. Charger holds new peeler in "ready" position for immediate chucking, when core block is dropped from lathe . . . same type one-station operation. Diagrams indicate charger's simplicity and flexibility.

For handling peelers of any size an EDERER lathe charger—either floor mounted or overhead—can be "job-engineered" to your exact requirements. Write for full information.

252V54

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PLYWOOD EQUIPMENT

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Lebanon, Oregon

(Continued from Page 100)

newspaper designed to stimulate better and more aggressive plywood selling.

Salesmen 'Back to School'

Simultaneously, the industry is organizing a series of selling classes for jobber salesmen. These will last a week for each group of salesmen sent to Tacoma for the seminars. This program is basic and is expected to result in a substantial improvement of sales methods and actual sales. Here's a tip-off. A year ago, three jobber salesmen were sent by their employer to see a plywood mill for the first time. From the day they returned to the job, each one increased his volume by more than 20 per cent.

Present plans call for about 100 salesmen a week. They'll see logging camps, plywood mills, research laboratories, demonstrations of plywood properties. They'll get new use data first-hand and they'll learn about new promotional tools.

The schools this year will be a start. Only a few of the salesmen constituting the country's selling force can be handled this summer. But the sales impetus can be terrific. If the average salesman's record improves anywhere near the examples mentioned above, the upsurge in actual business will repay the investment many times.

Per Capita Consumption of Plywood in U. S.

Year	Fir Plywood Production In Millions	Per Capita (Sq. Ft.)
1946	1,395	10.
1947	1,630	11.4
1948	1,871	12.8
1949	1,889	12.7
1950	2,554	16.9
1951	2,866	18.7
1952	3,049	19.8
1953	3,670	23.3

Douglas Fir Plywood Production by grades, 1952–1953

	Production 1952		Estimated Production 1953	
	Percentage of Total	Footage ⅜ Basis	Percentage of Total	Footage ⅜ Basis
Interior				
A-A	5.99	182,695,000	5.03	184,601,000
A-B	4.87	148,535,000	4.56	167,352,000
A-D	33.19	1,012,295,000	31.76	1,165,592,000
B-B	1.23	37,515,000	1.30	47,710,000
B-D	1.56	47,580,000	1.40	51,380,000
C-D	21.94	669,170,000	24.39	895,113,000
Misc.	4.54	138,470,000	2.67	97,989,000
Total Interior	73.32	2,236,260,000	71.11	2,609,737,000
Exterior				
A-A	2.55	77,775,000	2.40	88,080,000
A-B	1.83	55,815,000	1.87	68,629,000
A-C	12.31	375,455,000	12.27	450,309,000
B-B	4.92	150,060,000	5.41	198,547,000
B-C	.47	14,335,000	.44	16,148,000
C-C	1.24	37,820,000	1.14	41,838,000
Misc.	1.40	42,700,000	1.29	47,343,000
Total Exterior	24.72	753,960,000	24.82	910,894,000
Unidentified	1.96	59,780,000	4.07	149,369,000
TOTAL, IND.	100.00	3,050,000,000	100.00	3,670,000,000

Douglas Fir Plywood Production in U.S.

(square feet, ⅜" basis)

1924	125,000,000	1939	950,000,000
1925	153,000,000	1940	1,200,000,000
1930	305,000,000	1941	1,620,000,000
1935	480,000,000	1942	1,782,000,000
1936	700,000,000	1943	1,430,000,000
1937	725,000,000	1944	1,440,000,000
1938	650,000,000		

Year*	In Million Sq. Ft.	No. of Mills
1945	1,200	31
1946	1,395	33
1947	1,630	40
1948	1,871	45
1949	1,899	55
1950	2,554	67
1951	2,867	76
1952	3,050	85
1953	3,670	91

*Figures from 1945-53 from Douglas Fir Plywood Association.

British Columbia Plywood Production

1941-1953—Square feet, ⅜-inch basis

1941 — 173,000,000
1942 — 184,000,000
1943 — 195,000,000
1944 — 218,000,000
1945 — 204,000,000
1946 — 224,000,000
1947 — 296,000,000
1948 — 338,000,000
1949 — 300,000,000
1950 — 349,000,000
1951 — 406,000,000
1952 — 440,000,000
1953 — 580,000,000*

(*Preliminary production figure.)

For the Plywood, Lumber and Woodworking Industries

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Seattle . . .

A complete adhesives and resins plant, an expertly staffed laboratory, and a fully manned sales office to serve you.

Avon . . .

A *new* phenol plant which frees western industry completely from eastern sources of supply.

San Francisco . . .

Experienced salesmen, ready to serve you from this centrally-located office.

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A second adhesives and resins plant and laboratory brand-new . . . to make Monsanto a dependable source of materials and service.

Long Beach . . .

A fourth plant of Monsanto for supplying west coast industry.

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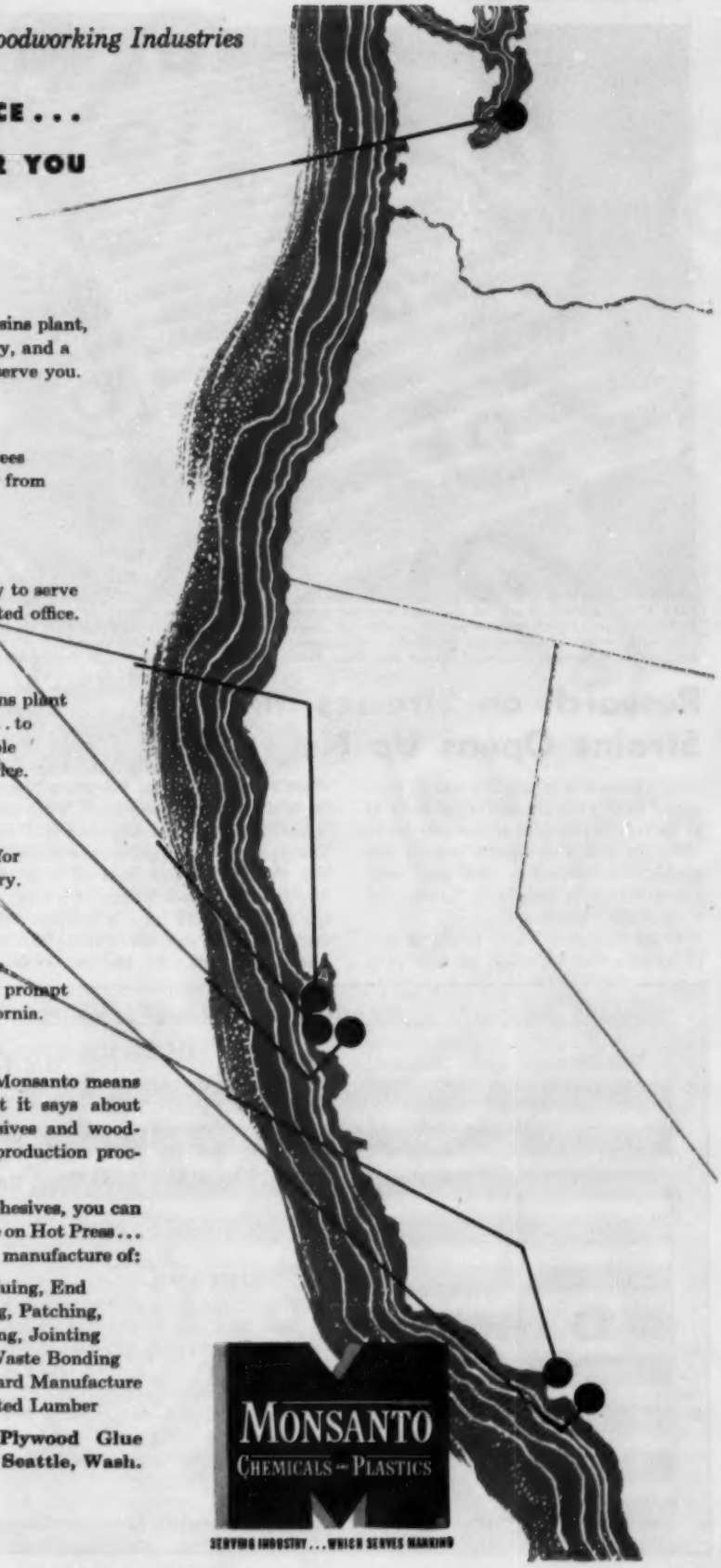
Monsanto's third sales office, strategically located to give prompt service to this area of California.



The map tells the story. Proves Monsanto means what it says about service, what it says about prompt, assured supplies of adhesives and wood-bonding resins adapted to your production process, your product.

With Monsanto's broad line of adhesives, you can command in-plant technical service on Hot Press . . . Cold Press . . . or High-Frequency manufacture of:

Exterior Plywood	Edge Gluing, End
Interior Plywood	Gluing, Patching,
Hardwood Panels	Splicing, Jointing
Furniture Assembly	Wood Waste Bonding
Doors	Hardboard Manufacture
Molded Plywood	Laminated Lumber

FOR INFORMATION write Plywood Glue Sales Dept., 911 Western Ave., Seattle, Wash.

MONSANTO
CHEMICALS — PLASTICS

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FULL-SCALE MODEL is set up in warehouse for testing. Framing is 2x6 joists 24" on center. Completion of project culminated 14 months of study, permits engineers and builders to cut costs with plywood construction in schools, warehouses and other large buildings that must be designed to withstand dangerous lateral and shear forces set up by hurricanes and earthquakes.

Research on Stresses and Strains Opens Up New Fields

Progress in application of plywood in the highly technical field of structural stress and strain was made recently when research solved the problem involved in roof and wall construction. A simplified "layman's" explanation follows.

What happens when stress is applied to a flat plywood surface in a floor or roof deck in the same plane in which the surface lies? You can visualize this by imagining a Paul Bunyan shoving against the edge of the floor with the heel of a giant hand. The surface where he's applying pressure will have a tendency to curve and the side away from him to curve outward. At the same time forces described as shears are set up within the floor itself.

What's this got to do with plywood?

Engineering Data Needed

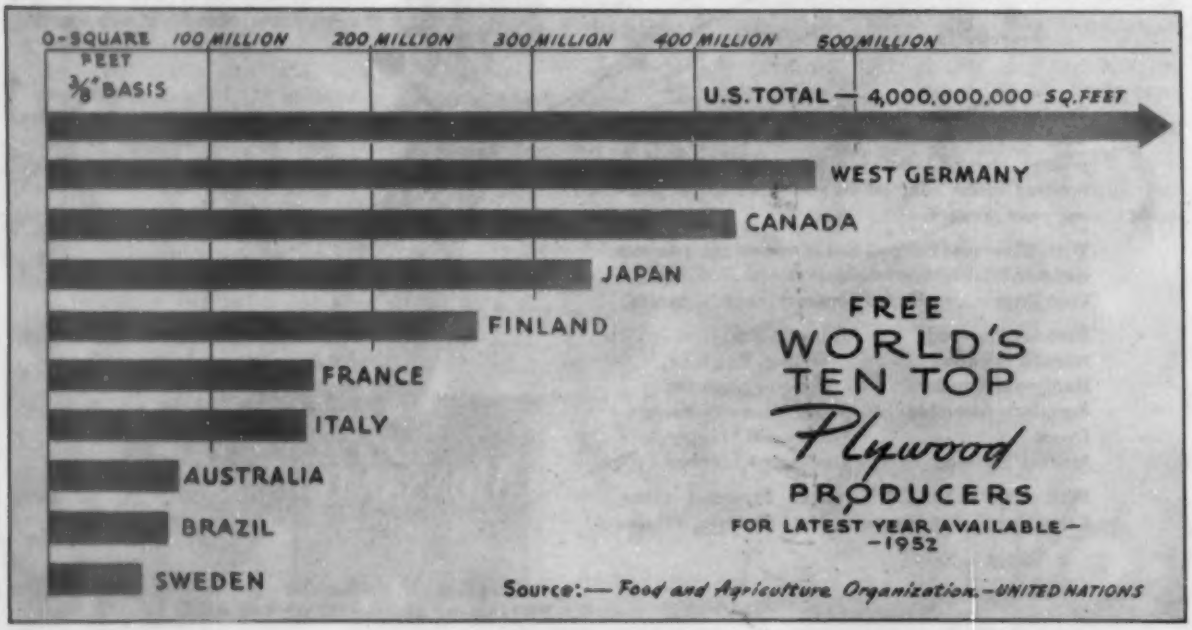
Here's the answer. Since these stresses and strains are identical to those setup by earthquakes and hurricanes, it's important in the design of a building. And, where the design must be calculated to resist load limits of this nature, it's essential that a designer or engineer have accurate information on the action of various materials.

Until about two years ago little or no information on plywood's action under such stress was available. Then, through its trade association, the western fir plywood industry tackled the problem. The results have been spectacular. After two years of basic research, the association's technical department has proved that plywood provides a stronger, more rigid floor and they have developed a design method for use in conjunction with plywood.

Rise in Sheathing Use

Values assigned to plywood as a result by the Uniform Building Code and by other similar agencies have stimulated a sharp increase in the use of plywood sheathing, particularly in Southern California, which is notorious for vicious quakes.

The initial research consumed two years time, it involved more than 15,000 individual numerical observations and required the building and detailed testing of six quarter-scale model floors and four full-scale mod-



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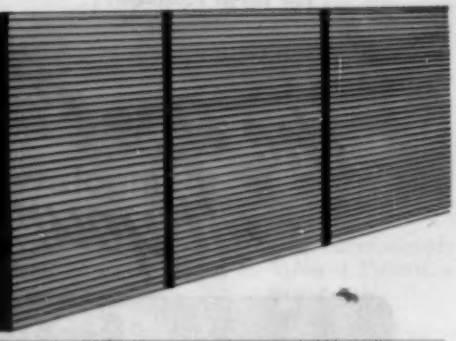

el floors. The project was so successful that further tests have been going forward in an effort to detail even more clearly the new body of knowledge that has been accumulated.

Stimulated by the progress made by association engineers, the United States Forest Products Laboratory at Madison is conducting comparative tests on plywood and other materials. The University of Oregon has just recently published the results of other similar tests, adopting association data for its own reports.

Researchers in Demand

Both Nelson Perkins, association technical director who conceived the research project, and David Countryman, association civil engineer who carried out the program, have been in demand by structural engineers meetings and building codes conferences as a result of their work.

Just how much of the increase in the use of plywood sheathing, particularly in structures like schools and warehouses, can be attributed to the research is impossible to determine. But it's been enough to justify further research of a similar nature. This has already started and is intended to develop markets for plywood in one story frame buildings including schools. Walls are subject to shear forces similar to those in roofs and floors. It is expected that forthcoming tests will develop greater markets for Plypanel grade and Plyshield grade of fir plywood where it is used in combination as both finish and structure for interior paneling or exterior wall surfaces.

Brazilians Develop Corrugated Plywood

A recent development by the plywood industry of Brazil is that of corrugating plywood by means of a special spiral-spring platepress.

Corrugated plywood has found an exceptionally great market in Brazil, especially for roofing and its production is already sold for various months in advance. The industry is now in a period of expansion in which some new presses of larger capacity will be installed in order to cover the demand of the domestic market.

Until recently there has been no satisfactory answer to the problem of producing corrugated plywood on an industrial scale, and that is why this material is completely unknown in the world of business. There are several materials, like metal, plastics, cement-asbestos, pasteboard, etc., which are already known under corrugated shape. The problem of corrugating plywood has been worked out in a simple and economical fashion by a Brazilian engineer, Mr. Ruben de Mello, who has patented his machine, a plywood press, in Brazil and in several other countries including the United States.

The invention consists in a system of bars separated from the plate of the press by means of spiral springs. By this system, the veneers are successively corrugated from the center to the sides, the springs for the center corrugations being longer than the others. The production of corrugated plywood is as easy and rapid as that of plane plywood produced by means of the common presses of multiple plates used in the industry of plywood.

By this reason, the price of the material is equal to that of plane plywood, plus an increase of 10% which corresponds to the loss of dimension due to the undulation. There is an enormous field for the employment of corrugated plywood for decorative purposes, because the aspect of the corrugated form is very attractive. Due to its enormous strength, corrugated plywood has also a large field as a material for various kinds of constructions.

Yates-American

BELOIT, WISCONSIN

BRANCH OFFICES: CHICAGO, ILLINOIS; HIGH POINT, NORTH CAROLINA; MEMPHIS, TENNESSEE; PORTLAND, OREGON

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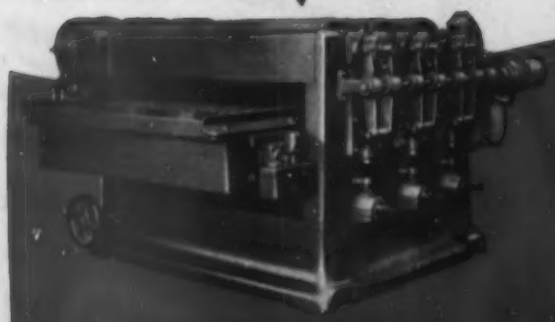
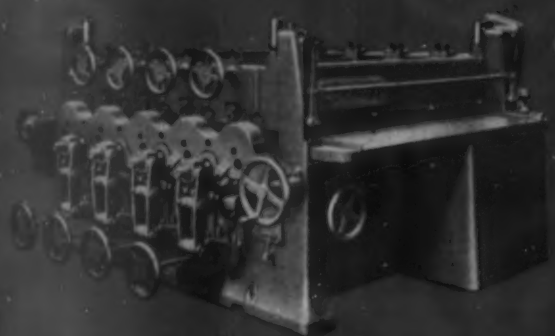
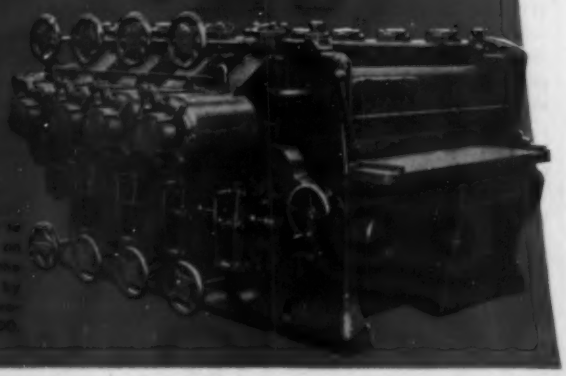


ENDLESS BED SANDERS
2, 3, and 4 drum



SINGLE DECK, ROLL FEED SANDERS
3 and 4 drum



DOUBLE DECK ROLL FEED SANDERS • 6 and 8 drum

GOES UP EASILY and inexpensively. Big factor in stimulating initial sales of T-1-11 is low application cost. One architect estimates that application costs in his area are only a fifth of that for expensive other materials needed to gain same visual effect.

FINISHED HOME LOOKS LIKE THIS. Texture One-Eleven is catching on fast and was the hit of the builder's show in Chicago. Photo here shows new panel with grooves spaced 2" o.c. in modern ranch style home in Los Angeles.

Texture One-Eleven Heralded

by producers, builders and architects as a great development in plywood

In 1954, western fir plywood manufacturers look to Texture One-Eleven, a new stylized outdoor building panel, to boost sales of exterior by as much as 100 million feet.

Ten firms are presently in production or ready to start. Last fall and early this year only token shipments that were little more than samples were going out. Today, the manufacturers are getting full carload orders and some of the mills are reporting sales of as much as several cars weekly.

But more important, the industry has placed warehouse stocks of the new product in all key trading areas and it is rapidly reaching the point where almost all established plywood distributors will carry a full stock of the panels.

The upsurge in actual business reflects the terrific impact that T-1-11 has already had on the market. The nation's builders got their first look at it in January at the Chicago Home Builders Show where it provoked more comment than any other new building product exhibited.

At least 50 per cent of the estimated 5,000 builders who saw the industry's display spontaneously asked: "Where can I get it?"

In the Southern California market where the first volume shipments went early this spring, the panel is catching on fast. Sam Berger, famed Long Island community developer, is using it in the first batch of a contemplated 2,000 unit project near San Diego.

In Los Angeles proper, Mobilhome of Los Angeles used it on an outstanding contemporary home designed as their new 1954 model. The striking modern ranch house into which T-1-11 fits so harmoniously was designed by Edward Fickett, a leading architect in the area.

Low Installation Costs

Prefabricators, large community developers, builders and architects across the country have acclaimed the new panel as exactly what's needed to achieve modern architectural effects at minimum low cost.

Architect Philip Goodman of Washington, D. C., estimated installation costs of the new panel at 4 cents a square foot compared with up to 20 cents for materials needed to achieve the same visual effect.

Mills now in production or getting ready to go are:

Associated Plywood Mills, Inc.—Eugene, Oregon
Cascades Plywood Corporation—Portland, Oregon
The Long-Bell Lumber Co.—Longview, Washington
Mt. Baker Plywood, Inc.—Bellingham, Washington
Northwest Door Company—Tacoma, Washington
Roseburg Lumber Company—Roseburg, Oregon
St. Paul & Tacoma Lumber Co.—Tacoma, Washington
Simpson Logging Company—Shelton, Washington
Snellstrom Lumber Co.—Eugene, Oregon
Everett Plywood and Door Corporation—Everett, Wash.

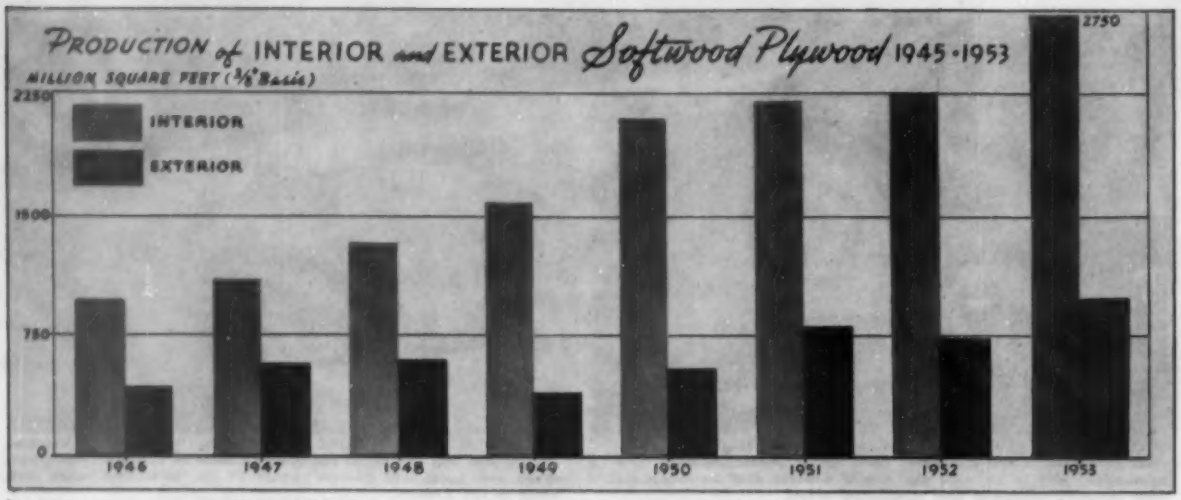
1953 Was Biggest Year

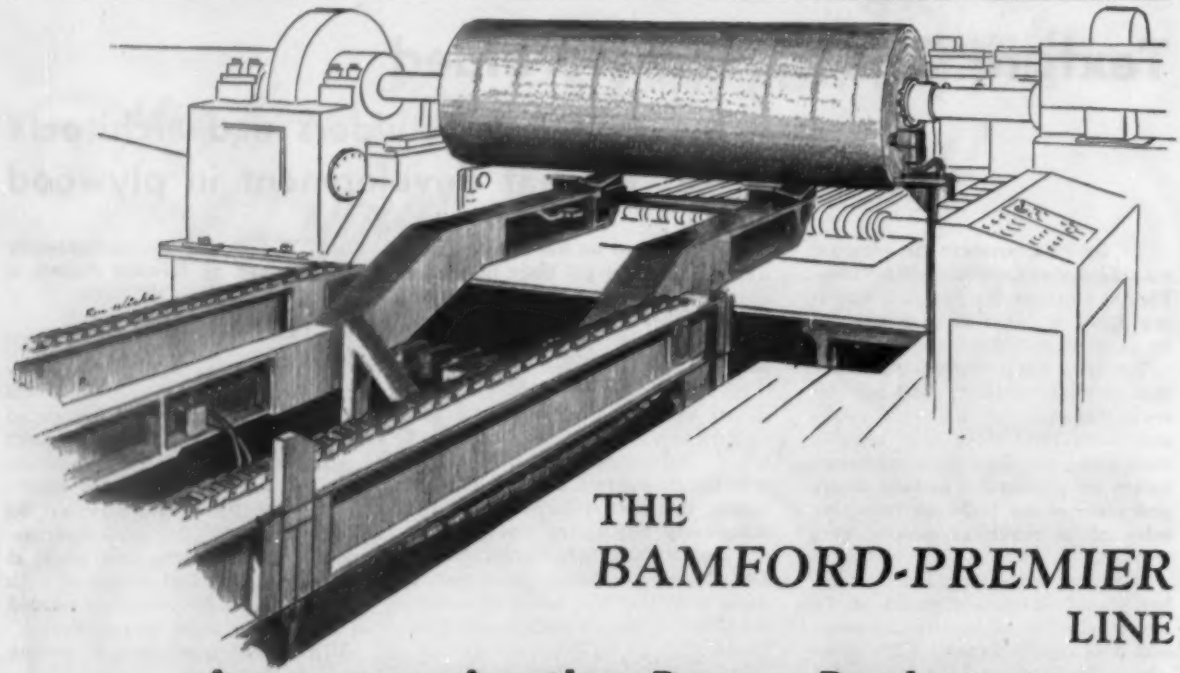
(Continued from Page 99)

some of its biggest guns will be turned on the problem of creating more efficient selling methods.

Plans for the first of a continuing series of selling seminars for plywood salesmen in Tacoma are crystallizing fast. Meanwhile, new sales aids designed to help retail lumber dealers who sell 50 per cent of industry output are in the works. As part of the educational theme, the industry has published the first issue of a new bi-monthly newspaper for all 27,000 lumber dealers. The new publication is intended to educate dealers in new sales methods and techniques applying to fir plywood.

In view of general business conditions, expectations of capturing an increasing share of important markets and a well-rounded, hard-hitting promotion program, the industry appears to be aiming at realistic, attainable production goals in the year ahead.





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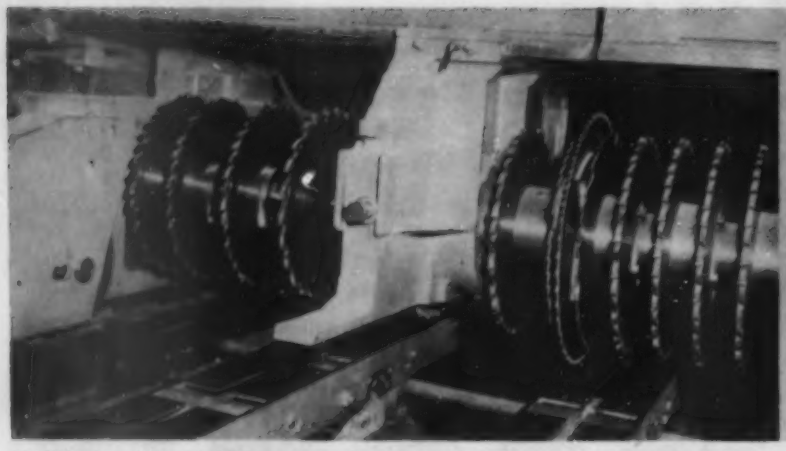
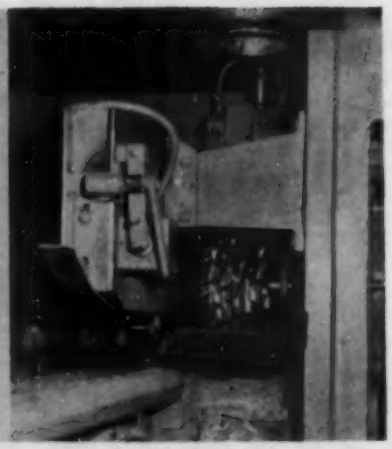


CLOSEUP OF CARBIDE-TIPPED saws for manufacture of Texture One-Eleven. These particular saws were manufactured by Pacific Saw and Knife, Portland. They are sold through Tallman Machinery.



CLOSEUP OF HOGGING and planing head, which is responsible for accurate sizing of panels, made by Pacific Saw and sold through Tallman.

Use of These New Heads

brings greater accuracy to the sizing of plywood panels and grooving of new Texture One-Eleven

The plywood industry during 1953 made some production innovations making possible greater accuracy and proper sizing of panels. The new sizing techniques have resulted from work by industry leaders and machinery manufacturers.

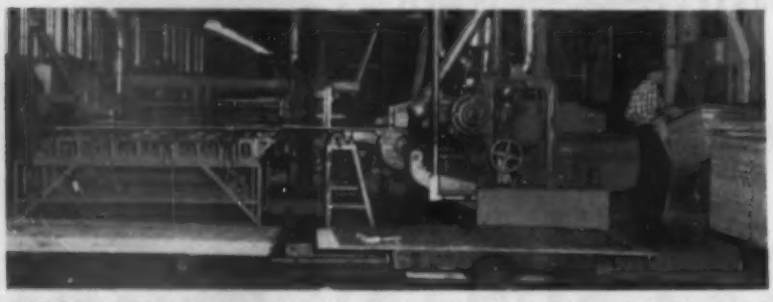
The most publicized production innovation of this type has been the manufacture of Texture One-Eleven.

A contributor of these new methods has been Greenlee Bros. and Company, Rockford, Ill., and the Greenlee dealer in Oregon and Washington — Tallman Machinery Co., Seattle.

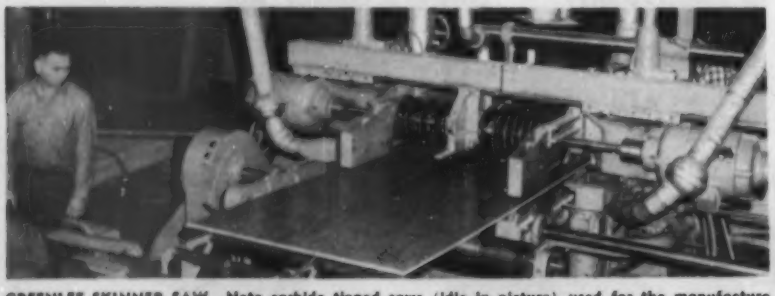
Accuracy to ½%

After months of engineering, plywood plant operators are finding that one of the most successful panel sizing units consists of a Greenlee skinner and cutoff saw. The Greenlee accuracy on panels is reported to be within .005 in square.

One of the first such sizing units to operate is located at the Olympia plywood plant of St. Paul and Tacoma Lumber Co. Similar installations, utilizing either a Greenlee skinner saw, or a Greenlee cutoff saw (or a combination of both) have been or are being made at the following plywood operations: U. S. Plywood Corp., Seattle; Snellstrom Lumber Co., Eugene, Ore.; Associated Plywood Co., Engene; Linnton Plywood Association, Portland; plywood division, Roseburg Lumber Co., Roseburg, Oregon; Alaska Plywood Corp., Juneau, and Simpson Logging Co., Shelton, Washington.



A GENERAL VIEW of new plywood-panel sizing unit at the Olympia, Wash., plant of St. Paul & Tacoma Lumber Co. Unit includes a Greenlee skinner saw (infeed end at right in picture) and a Greenlee cutoff saw (at left). Industry reports on accuracy indicate plastic overlays are trimmed to within .005 in square.

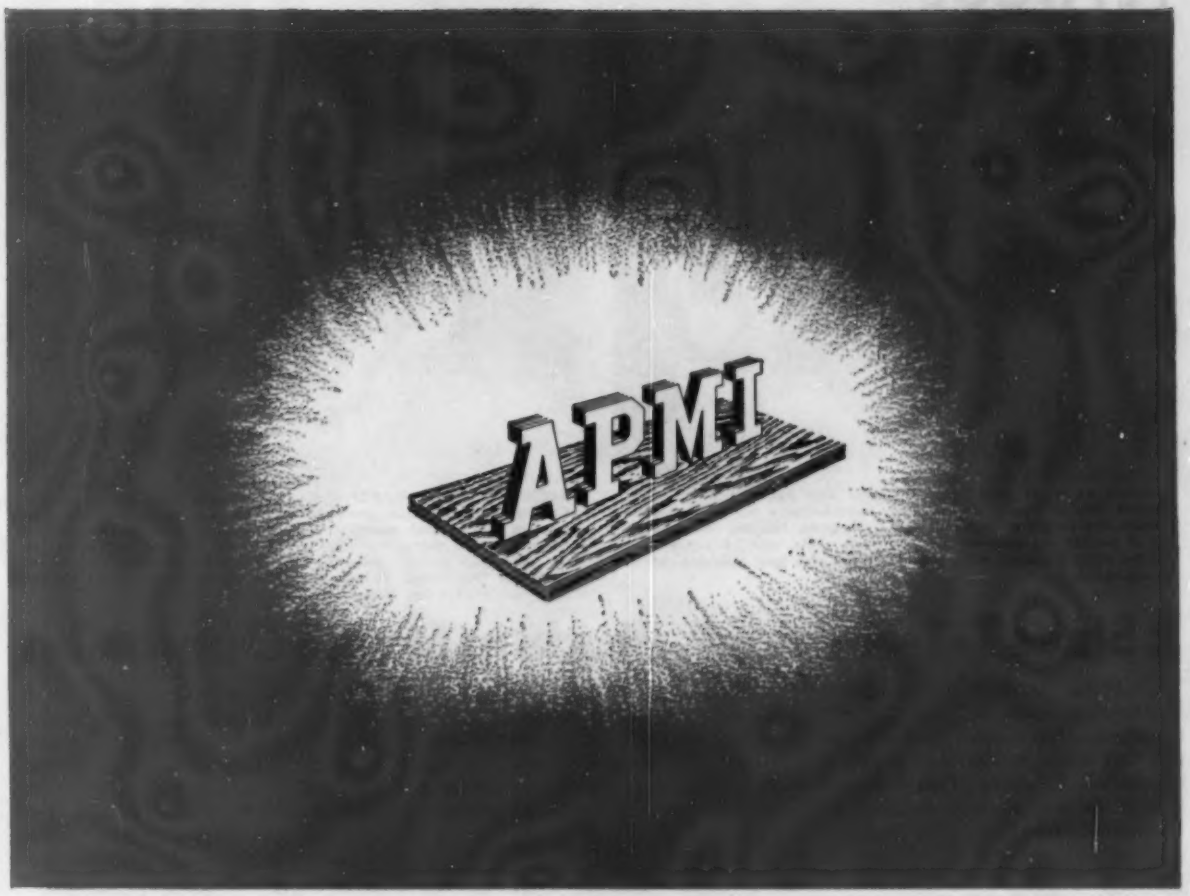


GREENLEE SKINNER SAW. Note carbide tipped saws (idle in picture) used for the manufacture of new plywood specialty, Texture One-Eleven. When these photographs were taken plastic overlay panels were being sized. Skinner hogging head cannot be seen. Note absence of trimmings and edgings.

Versatile Unit

The unit is versatile. It will handle conventional panels as well as plastic overlays. The Greenlee skinner is equipped also with a battery of saws for manufacturing the longitudinal cuts in the new One-Eleven Douglas fir plywood panels. Other decorative patterns can also be cut, including V-panelling and tongue and groove.

The key to the accurate squaring of the panels is a combination hogging and planing head, which, in the case of the Greenlee installation at St. Paul and Tacoma, is manufactured by Pacific Saw and Knife Co., Portland. This special head, sold by Tallman Machinery, will cut plastic without chipping the edge of the panels.



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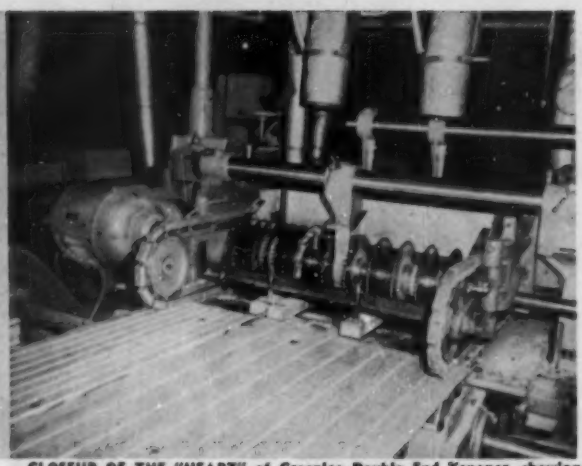
OVERALL VIEW of the Greenlee Double End Tenoner, which, with Cascade carbide tipped saw-groovers, manufactures the new plywood Texture One-Eleven at Northwest Door Company, Tacoma, Washington. 4 x 8' panels are grooved; split into two parts, one 16-inches wide and the other 32-inches wide; and a ship-lap type joint provided—all in one operation.



CLOSEUP OF THE "HEART" of Greenlee Double End Tenoner, showing Cascade carbide-tipped groovers. Operator has removed metal hood to show spacing and operation of the groovers. Note splitting saw, in center of dado shaft, which splits panel into 32" and 16" parts. On the 32" panel grooves are 4" apart; on the 16" side the grooves are separated two inches. Carbide tipped saws are manufactured by Cascade Saw & Tool Co., Chehalis, Wash.

2 Sizes T-1-11 Panels Made in Single Operation

Some ingenious production engineering, both in methods and machines, has accompanied the progress made in the new plywood specialty, "Texture One-Eleven." One of the first plants to make T-1-11 is Northwest Door Co., Tacoma, Wash., and its technique in grooving the new panels is described here.

According to Miles Munson, Northwest's production engineer, the use of Texture One-Eleven is growing steadily, particularly as an exterior siding.

Production at Northwest Door is keyed to a Greenlee Double End Tenoner, manufactured by Greenlee Bros. and Co., Rockford, Illinois, and the use of carbide-tipped grooving saws manufactured by Cascade Saw and Tool Co., Chehalis, Washington.

These saws—or groovers as they are actually called—were developed by Tad Dowling of Cascade. The grooves in the One-Eleven panels are placed four inches apart on the 32-inch wide panels and two inches on the 16-inch panels.

The separation of the large 4 x 8 panel into two parts—one 32 inches wide and the other 16 inches wide is accomplished by a carbide tipped splitter saw, also a Cascade product. Simultaneously, as the panel moves through the splitter saw rabbetted edges are provided for a ship-lap type joint.

At the present time eight foot long panels are being manufactured at Northwest Door. As popularity of the Texture One-Eleven panel grows other lengths will be produced. Reception to the new panel is developing well not only among builders but also among architects.

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1951	334,763,432
1952	568,887,998
1953	895,113,000

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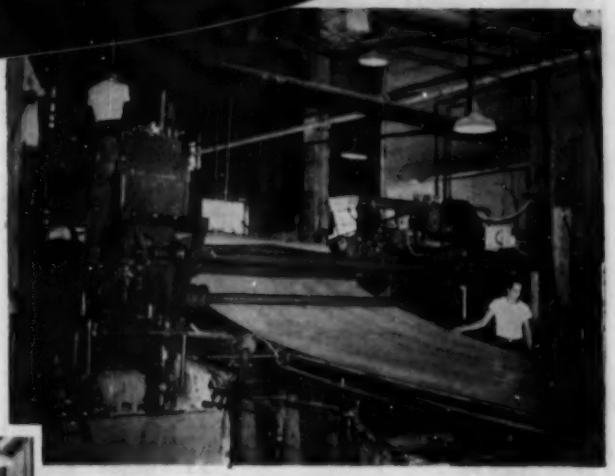

View of discharge side of high production Model 244 veneer lathe with roller nose bar and hydraulic spindles.

View of grading table on discharge side of two Model 330 automatic veneer clippers.

View of discharge side of Model 48 roller veneer dryer which is capable of increase in capacity through the installation of additional sections.

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LOCATION, NAME &

★ ALL MAJOR PLYWOOD AND VENEER PRODUCING cities and communities are shown on the map at left. Most of these production sites are located on or near major highways, which are represented by thin gray lines. Some smaller towns do not appear. A complete list including all addresses, personnel, equipment, products and production statistics for the following plants may be found in the latest editions of THE LUMBERMAN'S Handbook & Directory of the Western Forest Industries and of the Southern Forest Industries.

ALASKA

JUNEAU—Alaska Plywood Corp., plywood.
WRANGELL—Wrangell Plywood Lumber Co., (plywood, '54).

CALIFORNIA

ANDERSON—Anderson Veneer Co., veneer.
Kalpine Plywood Co., plywood.
Shasta Plywood Division, U. S. Plywood Corp., plywood.
ARCATA—Arcata Plywood Corp., plywood.
California Barrel Co., Inc., veneer.
Durable Plywood Co., core stock.
Humboldt Plywood Corp., plywood.
CALPELLA—Durable Plywood Co., plywood.
CRESCENT CITY—Del Norte Veneer Co., veneer.
Lund Plywood & Mfg. Co., plywood.
Pacific Veneer, Inc., veneer.
Paragon Plywood Corp., plywood.
Standard Veneer & Timber Co., sheathing.
West Coast Veneer Co., veneer.
EUREKA—Humboldt Veneer Co., veneer.
M&M Wood Working Co., plywood.
FAIRHAVEN—(near Arcata)—Mutual Plywood Corp., plywood.
FLORIN—Pine Veneer Cover Co., veneer.
FORTUNA—Fortuna Veneer Co., veneer.
Universal Forest Products, plywood.
HAPPY CAMP—Yreka Veneer Co., veneer.
HONEYDEW—Vanworth Lumber & Veneer Co., plywood.
HUNTINGTON PARK—Karpen Plywood Co., plywood.
KLAMATH—Crescent Plywood Co., plywood.
Simpson Logging Co., veneer.
LEGGETT (Mendocino Co.)—The Pacific Coast Co., veneer.
LOS ANGELES—Angelus Furniture Mfg. Co., plywood.
International Veneer & Plywood Corp., plywood.
Western Pacific Plywood Corp., plywood.
Wood & Cies Mfg. Co., plywood.
OAKLAND—Albrite Mfg. Co., plywood.
REDDING—Redding Veneer & Box Co., Inc., veneer.
SAN ANDREAS—Calaveras Forest Products Corp., plywood.
SONOMA—California Pacific Plywoods, Inc., plywood.
Sonoma Plywood Co., plywood.
SOUTHGATE—General Veneer Mfg. Co., plywood.
WEED—Long-Bell Lumber Co., plywood.
WESTWOOD—Fruit Growers Supply Co., plywood.
WILLITS—Industrial Plywood Corp., plywood.

IDAHO

LEWISTON—Potlatch Forests, Inc., plywood (pine).
WEISER—Produce Containers, Inc., veneer.

OREGON

ALBANY—Albany Veneer, Inc., core stock.
Edwards Bros. Const. Co., veneer.
Linn Plywood Corp., plywood.
M&M Wood Working Co., plywood.
ASTORIA—Astoria plywood Co., plywood.
Uptegrove Lumber Co., plywood.
AUMSVILLE—Willamette Builders Supply Co., plywood.
BANDON—Bandon Veneer & Plywood Assoc., veneer.
BROOKINGS—Brookings Plywood Corp., plywood.
COALCA (P. O. Oregon City)—Doernbecher Mfg. Co., veneer.
COOS BAY—Evans Products Co., plywood.
Spruce Veneer Products Co., veneer.
COQUILLE—Coos Bay Lumber Co., plywood
Coquille Plywood, Inc., plywood.
CORVALLIS—Corvallis Plywood Corp., plywood.
Peak Plywood Corp., veneer.
COTTAGE GROVE—W. A. Woodard Lumber Co., plywood.
CRESWELL—Holt Lumber Co., veneer.
Milwaukie Plywood & Door Coop., veneer.
CULP CREEK—Cottage Grove Plywood Co., veneer.
CURTIN—Forrest Veneer Co., veneer.
DILLARD—Pacific Plywood Co., plywood.
Roseburg Lumber Co., plywood.
ELKTON—Snellstrom Lumber Co., veneer.
EUGENE—Associated Plywood Co., plywood.
Campbell & McLean, Inc., plywood.
Giustina Veneer Co., veneer.
Lane Plywood Co., plywood.
Snellstrom Lumber Co., plywood.
GARDINER—Gardiner Lumber Co., plywood.
GARIBALDI—Oregon-Washington Plywood Co., plywood.
GLENDALE—Multnomah Plywood Corp., veneer.
GOLD BEACH—Campbell & McLean, Inc., veneer.
GRANTS PASS—Grants Pass Plywood, Inc., plywood.
Southern Oregon Plywood, Inc., plywood.
GRESHAM—Olympic Mfg. Co., veneer.
Rotary Cut Box Co., veneer.
HARBOR—Lake Pleasant Plywood Co., veneer.
IDANHA—M&M Wood Working Co., veneer.
JUNCTION CITY—Valley Plywood Co., plywood.
KLAMATH FALLS—Kalpine Plywood Co., plywood.
LEBANON—Cascades Plywood Corp., plywood.
Western Veneer & Plywood Co., veneer.

PRODUCT OF WESTERN, EASTERN & SOUTHERN PLANTS

LYONS—M&M Wood Working Co., veneer, (plywood in '54).
MAPLETON—United States Plywood Corp., plywood.
MEDFORD—Medford Veneer & Plywood Corp., plywood.
MILWAUKIE—Milwaukie Box & Veneer Co., veneer.
Milwaukie Plywood & Door, Inc., plywood.
MYRTLE CREEK—Umpqua Plywood Corp., veneer.
NORTH BEND—Menasha Plywood Corp., plywood.
NORWAY—Myrtle Point Veneer Co., veneer.
OAKLAND—The Martin Bros. Box Co., plywood.
ODELL—Hood River Box & Veneer Co., veneer.
PORTLAND—Coast Veneer Co., veneer.
B. P. John Furniture Corp., plywood.
Linnton Plywood Association, plywood.
M&M Wood Working Co., plywood.
Multnomah Plywood Corp., plywood.
Western Cooperage, Inc., veneer.
PORT ORFORD — Western States Plywood Corp., plywood.
RIDDLE—Harbor Plywood Corp. of Ore., veneer.
ROSEBURG—Perkins Veneer Co., veneer.
Umpqua Plywood Corp., plywood.
SPRINGFIELD — Springfield Plywood Corp., plywood.
Weyerhaeuser Timber Co., plywood.
SUTHERLIN—Sutherlin Plywood Corp., plywood.
SWEET HOME—Oregon Plywood Corp., plywood.
TILLAMOOK—Aberdeen Plywood Corp., veneer.
Diamond Lumber Co., plywood.
TOLEDO—Georgia-Pacific Plywood Co., sheathing.
WESTFIR—Edward Hines Lumber Co., plywood.
WHITE CITY (near Medford)—Medford Veneer & Plywood Corp., plywood.
WILLAMINA—Associated Plywood Mills, Inc., plywood.
WINCHESTER—Evans Products Co., plywood.

WASHINGTON

ABERDEEN—Aberdeen Plywood Corp., plywood.
Harbor Plywood Corp., plywood.
West Coast Plywood Co., plywood.
ANACORTES—Anacortes Veneer, Inc., plywood.
ARLINGTON—Arlington Lumber & Plywood Corp., sheathing.
BEAVER—National Plywood Co. of Washington, plywood.
BELLINGHAM—Bellingham Plywood Co., plywood.
Mt. Baker Plywood, Inc., plywood.
Pacific Veneer & Plywood Corp., plywood.
CENTRALIA—Centralia Plywood, Inc., plywood.
CONCRETE—Skagit Veneer & Lumber Corp., veneer.
DARRINGTON — Three Rivers Plywood & Timber Co., veneer.
ELMA—Elma Plywood Corp., sheathing.
Gordon-Ladley Plywood Products Co., veneer.
ENUMCLAW—Cascade Machine Works, veneer.
EVERETT—Everett Plywood & Door Corp., plywood.
Walton Plywood Co., plywood.
HOQUIAM—Grays Harbor Veneer Corp., veneer.
Woodlawn Plywood Co., Inc., plywood.
KALAMA—Columbia Veneer Co., plywood.
KENMORE—Farwest Plywood Co., veneer.
KOSMOS—U. S. Plywood Corp., veneer.
LACEY—Lacey Plywood Co., Inc., plywood.
LEAVENWORTH—Construction Products Industries, veneer.
LONGVIEW—M&M Wood Working Co., plywood.
Weyerhaeuser Timber Co., plywood.
MC CLEARY—Simpson Logging Co., plywood.
OLYMPIA—Gordon-Ladley Plywood Products Co., plywood.
Hardel Mutual Plywood Corp., plywood.
Hy-Grade Hardwood Veneers, Inc., plywood.
St. Paul & Tacoma Lumber Co., plywood.
Washington Veneer Corp., (Georgia-Pacific), plywood.
OROVILLE—Okanogan Valley Veneer Co., veneer.
PORT ANGELES—Peninsula Plywood Corp., plywood.
PUYALLUP—Brew Manufacturing Co., veneer.
Hendricks Veneer Co., veneer.
Spruce Veneer Package Corp., veneer.
RAYMOND—Harbor Veneer Plant of Pacific States Box & Basket Co., veneer.
RENTON—Seattle Plywood Corp., veneer.
SEATTLE—Elliott Bay Mill Co., plywood.
U. S. Plywood Corp., plywood.
SHELTON—Simpson Logging Co., plywood.
STEVENSON—Stevenson Plywood Corp., plywood.
TACOMA—Buffelen Mfg. Co., plywood.
Engineered Plywood Prod. Co., Inc., plywood.
Donald W. Lyle, Inc., plywood.
North Pacific Plywood, Inc., plywood.
Northwest Door Co., plywood.
Puget Sound Plywood, Inc., plywood.
Rainier Plywood Co., plywood.
VANCOUVER—Vancouver Plywood Co., plywood.

BRITISH COLUMBIA

ESQUIMALT—Sooke Lake Lumber Co., veneer (plywood '54).
FRASER MILLS—Canadian Western Lumber Co., plywood.
KELOWNA—S. M. Simpson, Ltd., veneer.
NEW WESTMINSTER—Mount Baker Plywood Co., veneer.
Pacific Veneer Div., Can. for Prod., Ltd., plywood.
PORT ALBERNI—MacMillan & Bloedel, Ltd., Alberni Div., plywood.
QUESNEL—Western Plywood (Cariboo) Ltd., plywood.
VANCOUVER—Beaty Laminated, plywood.
MacMillan & Bloedel, Ltd., Vancouver Div., plywood.
J. R. Murray, Ltd., plywood.
Western Plywood Co., Ltd., plywood.
VICTORIA—B. C. Forest Products, Ltd., Victoria Div., plywood.
YOUBOU—B. C. Forest Products, Ltd., Cowichan Div., veneer.

(Continued on Page 189)

SOUTHERN OREGON
PLYWOODS, INC.
GRANTS PASS, OREGON
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EXTERIOR GRADES
INTERIOR GRADES
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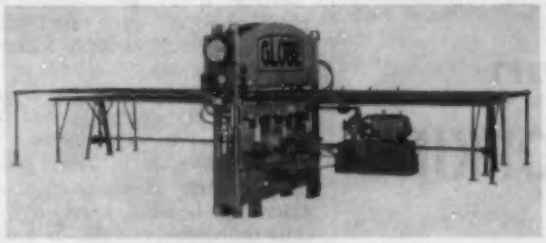

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WATCH FOR ANNOUNCEMENT OF NEW GREEN END CLIPPER YOU WILL WANT TO KNOW ABOUT IT

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PLYWOOD

Facts About Oregon's Plywood Industry

Employment in Oregon's plywood and veneer industry in 1952 was up 1300% from 1936. Comparison of 1952 and 1945 shows an increase of nearly 400%.

This big jump in workers is one of the greatest phenomena on Oregon's industrial scene in recent years.

Oregon's first plywood plant was established in 1905. In 1952, there were 54 plants in the plywood-veneer category.

In just one single year, 1951, 13 new plants started up, resulting in an employment increase of 19% over 1950.

Expansion in the industry continues, with one new panel plant and one new green veneer plant in the Corvallis area alone.

Plywood and veneer workers constitute 13% of the "covered" workers in the lumber and wood products industry of Oregon.

Payrolls increased every year except 1937 and 1938 (price recessions), 1945 (strike) and 1949 (severe winter, poorer market).

In 1952, 20 establishments paid out more than a million dollars each in payroll. The 1936 TOTAL payroll was under a million.

Four-fifths of all workers are concentrated in five counties: Linn, Lane, Douglas, Coos and Multnomah.

MTC

THE TRADEMARK OF QUALITY

PLYWOOD & WOODWORKING MACHINERY

Representing and Servicing

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2. Mattison Machine Works
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6. Jones and Orth
7. Columbia Division The Lodge and Shipley Co.
8. Lamb-Grays Harbor Co.
9. Lawrence Mfg. Co.
10. Orton Machine Co.
11. James L. Taylor Mfg. Co.
12. Pacific Saw & Knife Co.

Let us furnish you with information on precision skinner and cut-off saws, sanders, plywood presses, glue spreaders, hogs, scarfing equipment and clippers. Also moulders, ripsaws, surfacers, resaws and many other plywood and woodworking machines.

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SEATTLE 99, WASHINGTON

New Woods Machine Cuts High-Grade Slicer Cants

A larger potential supply of high-grade slicer cants for vertical grain plywood faces may well be the result of a sawing machine developed during the last two years and placed in operation in 1953. The machine consists of a gasoline-powered chain saw which hangs from a special spar mounted on a tree in the woods or around a landing. The saw and accompanying equipment accept eight-foot logs containing a large percentage of clear wood; the cut is made parallel to the longitudinal axis of the log, i.e., lengthwise along the grain. In this manner the saw teeth "shave" out the wood instead of "cutting" it out; the machine works rapidly and allows a small crew to produce a lot of valuable slicer-cant material per day.

The machine is valuable from the utilization standpoint in that it can be used on salvage shows. Only usable material, in cant form, is shipped out. Hardwoods, such as alder which have previously seen little utilization, can also be economically handled by this hanging saw. It was developed by an independent logger in Washington state named Lester Lamphaier.

Employment and Payroll In Oregon's Plywood And Veneer Industry

Year	No. of Plants	Average Emplmt.*	Covered Payrolls
1936	4	817	$ 812,617
1937	5	699	808,350
1938	6	592	714,020
1939	6	884	1,218,967
1940	9	1,298	2,032,381
1941	10	1,860	3,470,845
1942	11	2,928	5,981,669
1943	13	3,141	8,250,208
1944	12	2,990	8,301,114
1945	19	2,801	7,389,286
1946	24	4,318	12,236,246
1947	26	5,267	18,302,648
1948	31	5,906	22,374,294
1949	29	5,981	21,737,185
1950	33	7,470	31,750,870
1951	46	8,852	40,912,510
1952	54	10,783	49,778,202

*As measured by firms reporting to the state unemployment compensation commission.

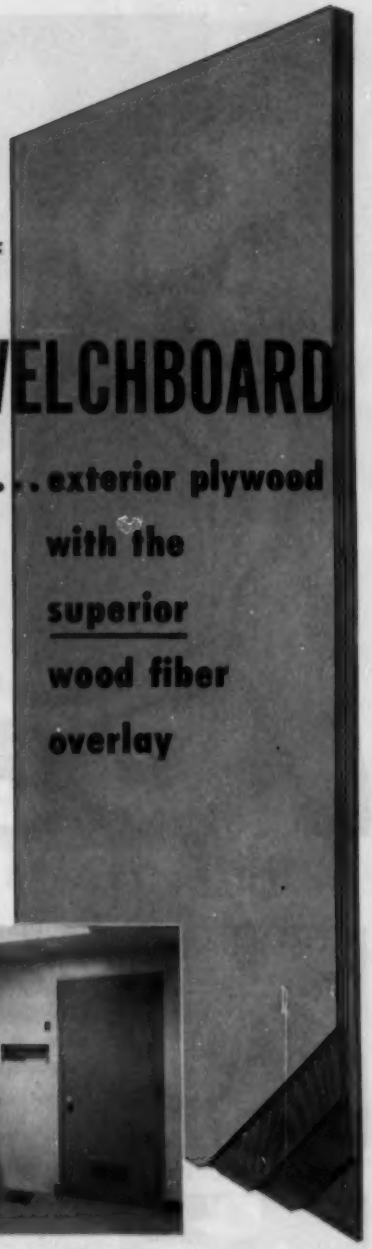
Source: State of Oregon.

Report from an early user...

"After four years' exposure painted Welchboard showed no signs of blistering or peeling..."*

**from a letter by*
Kenneth Schilling, Tacoma, Washington:

"After four years' exposure the 2-coat paint job on our Welchboard-and-batten exterior showed no signs of blistering or peeling. When we re-painted, using only 1 coat, just 2 gallons of paint, thinned with oil, were needed to give a sparkling new look to the 1600 square feet of exterior area."



WELCHBOARD is plywood *plus*. Real wood throughout, this versatile, advanced plywood product has a rugged wood fiber-and-resin facing laminated to its exterior side. The strong, smooth surface tests *35% harder* than standard plywood.

NO GRAIN TO RAISE. Here is a panel ideally suited to further decorating treatment. Its surface is *more than just smooth*. There is a denseness, a uniformity of texture that takes both interior and exterior finishes perfectly. All Welchboard panels are factory *pre-primed* before shipment.

WELCHBOARD-AND-BATTEN provide this lovely home both exterior beauty and sturdy protection. Enabling use of modular construction methods, Welchboard also saves in erection costs.

ARCHITECT SPECIFIED WELCHBOARD to achieve smooth, crevice-free, easy-to-clean wall surfaces for the laboratory areas of this modern doctors' clinic.

HUNDREDS OF APPLICATIONS. Already in extensive use on exterior, interior, residential, industrial and marine construction, Welchboard utilization grows daily. Whenever you need a material offering installation speed, hardness, strength, durability, weatherability and surface smoothness, specify the *plus* product among panelings—Welchboard.

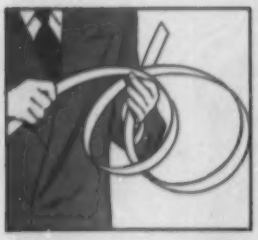
The Improved
WELCHBOARD
The Exterior Panel
That Is *Always* Smooth

WEST COAST PLYWOOD COMPANY
Aberdeen, Washington

Manufacturers of "Tru-Bilt" Exterior-Type and Interior-Type Douglas Fir Plywood • 100% Hot Press Operation

The Hardboard "Performance-Proved" To Be 3-Ways Better!

ARMORBORD



UNUSUAL FLEXIBILITY

A narrow strip can be bent like a hatband! This great flexibility combined with great strength and durability opens new fields to designers and fabricators or displays, toys, furniture.

GREAT IMPACT RESISTANCE

ARMORBORD stands up under the toughest treatment. Shrugs off hard blows. Simple framing makes ARMORBORD amply rigid for paneling, built-ins.

HARD, SATIN-SMOOTH SURFACE

ARMORBORD provides a smooth, scuff and abrasion resistant surface for tables and other work areas. Panels resist water, solvents, acids. Hard, smooth surface forms ideal paint base, yet need not be finished.

Yes, there is a difference in hardboards. New low-cost ARMORBORD has proved itself in actual performance to be stronger, more stable, and far more flexible than any hardboard has ever been before.

A new semi-dry manufacturing process makes the difference. It creates thousands of microscopic "trusses" which permanently interlock wood fibers — resulting in a board with a unique combination of advantages.

Prove it yourself. Ask your regular supplier — or write the office nearest you:

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ANACORTES VENEER, INC.
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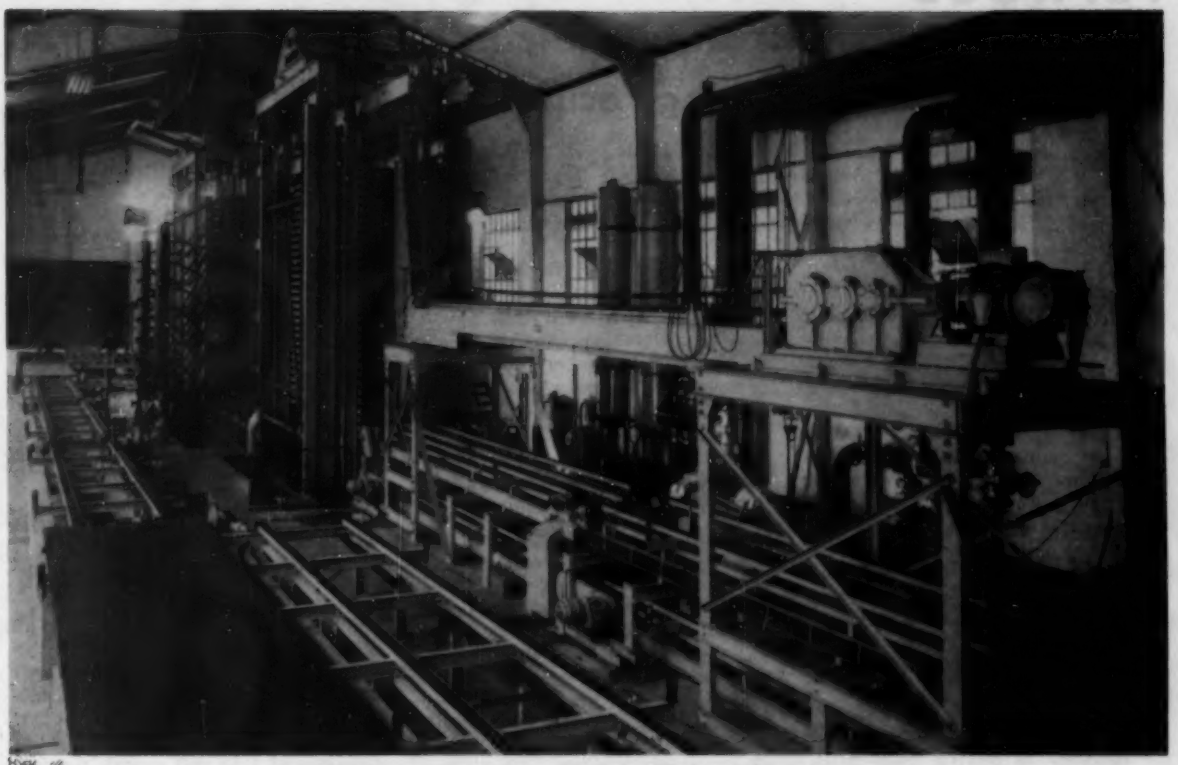
Manufacturers of

ARMORBOND Long Panel Plywood
Douglas Fir Plywood

ARMORBORD Hardboard
ARMORON Plastic Surfaced Plywood



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SIEMPELKAMP presses are made at Krefeld, Germany, in the world's largest hydraulic press plant. Seventy years ago, the founder of this world-famed company was the first to drill heating channels in press platens, thus launching the plywood industry as we know it today. Since that time hundreds of Siempelkamp presses have made outstanding production records in many parts of the world. Today, presses of many sizes and pressures are kept in stock, both in the United States and Germany. You may save time, money and trouble by contacting your nearest Siempelkamp representative today!

Deliveries this year include: SUTHERLIN PLYWOOD Corp., 15 opening 4'-0" x 8'-0"
WASHINGTON HARDBOARD PRODUCTS, INC., 20 opening 4'-0" x 8'-0"—1000# P.S.I.
M AND M WOOD WORKING Co., 2—20 opening 5' x 10'
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WILCO Machine Works
1301 North Hollywood
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Telephone 4-1188

PLYWOOD

1953 Sees B. C. Mills and Ply Plants Expanding Their Chipping Facilities

As a result of developments during the past few years, few of the major sawmills and plywood plants in British Columbia are without facilities for producing chips for the use of pulp mills. The trend towards integration which has been followed by the larger operating companies has added tremendously to the volume of wood chips available for British Columbia's growing pulp industry, with some of the province's plants continuing to barge chips to pulp mills in the Puget Sound and Port Angeles areas of Washington.

Among the latest additions to companies producing chips for pulp are Western Forest Industries Ltd. at Honeymoon Bay and Hillcrest Lumber Co. at Mesachie Lake, in the Cowichan district of Vancouver Island. Western Forest Industries, a subsidiary of Alaska Pine & Cellulose, ships its chips by rail to Crofton on the east coast of the Island for delivery to buying pulp mills, while Hillcrest ships by rail to Chemainus.

Big Summer Chipper

Also in the Cowichan district is the Youbou sawmill and plywood plant of British Columbia Forest Products, which produce chips that are transported 60 miles by specially designed highway truck to MacMillan & Bloedel's bleached sulphate mill at Harmac. B. C. Forest Products brought into full operation its big new Sumner chipper last year at the Victoria mill, and most of its production has been shipped across the Straits of Juan de Fuca to Port Angeles. The U. S. market is also served by another BFFP mill—the Hammond division plant on the Fraser River, which is the only producer of cedar chips in the province, used for production of lower grades of sulfite.

Having installed barking equipment at their plants, several of the companies have been taking what they regard as their next logical step and putting in barkers of one type or another to produce cleaner logs and effect greater over-all economy in wood use.

Barkers Under Development

One of the biggest of these barker installations has been carried out at the B mill of MacMillan & Bloedel Canadian White Pine Division, near Vancouver, where a 60-inch Simons barker will be handling the larger logs entering the mill. It was at the adjacent Canadian White Pine mill that the original Simons barker was installed, this having served as a "pilot" for later installations at Mac Millan & Bloedel's Chemainus division and Elk Falls Co.'s newsprint mill at Duncan Bay.

At Western Forest Industries plants, a new type of hydraulic barker operated by turbine has been installed by Hansel Engineering Co., and at Universal Box Co., a Hansel swinging arm barker, is in use. The Hansel company is developing several new types of barker specially designed for sawmills.

L & K Lumber Co. at North Vancouver has installed a Nicholson barker, which will work in conjunction with a Sumner chipper.

Two Mills Exclusively on Chips

Nicholson barkers have been installed at the Victoria mill of B.C. Forest Products and Canadian White Pine division of MacMillan & Bloedel.

Pacific Veneer Plywood Division, Canadian Forest Products, has added to its chipping facilities and completion of improvements at No. 3 mill of this company near Vancouver has increased the volume of available chips to be barged to Port Mellon, where the company operates its subisidiary Howe Sound Pulp Co.

The Howe Sound pulp mill and the Harmac mill on Vancouver Island are operated exclusively on chips produced from what would otherwise be regarded as mill refuse.

$20,000,000 Is Plywood Payroll in California

The state department of employment has recently begun tabulating insured wages and monthly employment in the veneer and plywood segments of forest industries in California. The first preliminary report of these figures is for the second quarter of 1953 and reveals the following:

The average number of workers in the plywood industry totalled 3316 for the period cited with a total quarterly wage of $4,499,381. The average number of workers in the veneer industry, which is classified separately from plywood, totalled 396 with a quarterly wage of $431,845.

Carrying forward the quarterly totals to an annual basis would give an approximate total annual payroll for plywood and veneer industries of $20,000,000 in California.

On the basis of the limited data, the state reports that there are seven plywood establishments having an annual payroll of $1,000,000 or more.

Telephone Elma 2521

ELMA, WASHINGTON

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4' x 4' PLYWOOD SHEATHING

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GLUES

You get the glues you need when you need them, and the quality your product deserves, when you specify RCI glues.

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Synthetic Resins
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Sodium Sulfate
Sodium Sulfite

Lumber core edge gluing with an RCI resin glue.

PLYWOOD

1953's British Columbia Output of Ply Increases 30% Over Record Year 1952

British Columbia's production of plywood scaled new heights in 1953, even though a decline in market demand in the late Fall resulted in curtailment of operations at some mills.

The unofficial estimate is that 580 million square feet of plywood, ⅜-inch basis, was produced by the province's eight mills, representing a value of about $47 million. This is an increase of about 135 million square feet from 1952, which was also a record-breaker despite a mid-year industry-wide strike. Value of production advanced more than $10 million last year.

Operators do not look for any sharp increase in production this year because no immediate rise in capacity is contemplated. The industry has been going through a period of expansion on a broad scale and this has now given way apparently to a period of consolidation and stabilization. During the past three years there have been important additions to capacity at Victoria, where B.C. Forest Products completed its big plant in 1952; at Quesnel, where Western Plywood Co. completed its mill for the Cariboo division, and at Port Alberni, where the size of MacMillan & Bloedel's plant was virtually doubled during the past Fall.

MacMillan Production High

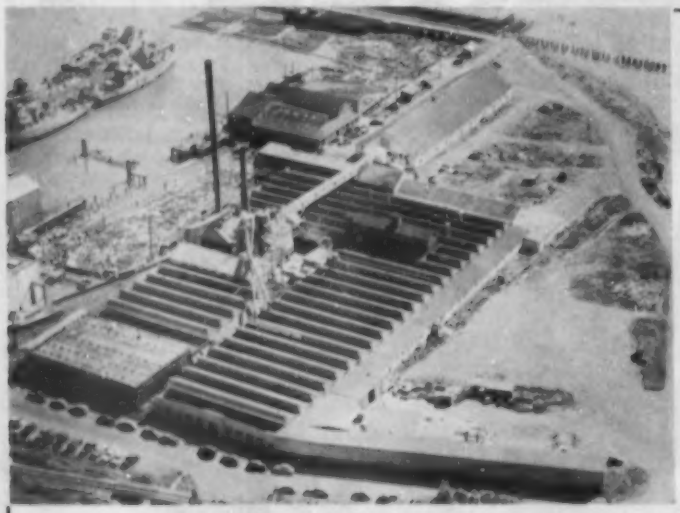
Canadian Forest Products Plywood Division continued as the No. 1 producer under one roof and MacMillan & Bloedel's two mills—at Vancouver and Port Alberni—accounted for a total of 197 million feet for the year ended September 30 to lead all companies.

Some 95 percent of British Columbia's plywood is at present marketed in Canada, and to promote sales the industry has a $500,000 fund which is devoted principally to consumers. The Plywood Manufacturers Association of British Columbia has been encouraging the "do-it-yourself" campaign and reports a good response, and it has also joined with other industries in promoting the use of plywood by architects and building contractors. There has been a particularly aggressive campaign in behalf of "Western Woods Trend Houses" designed to favor the selection of British Columbia plywood as well as lumber and shingles for home construction. A film on plywood manufacture and use was prepared for distribution among engineering, architectural and building groups. Establishment of definite standards for the industry, initiated more than a year ago, has added considerably to plywood's prestige and has stimulated sales in competition with other materials.

Hope for UK Market

Since so much of the trade is dependent on the Canadian economy, the 1954 market will be largely influenced by the country's over-all prosperity. There has been no sign of a slump, although the big surplus of unsold grain on the prairies has slowed buying in one of the country's most important market areas.

The plywood manufacturers still hope to make a dent in the United Kingdom market, where much of the putput went during the war years, but competition continues to be keen and there is still the overriding shortage of dollars to curb sales.



UNDER THIS ROOF
QUALITY IS KING!

- ***Driftwood***
  This Mt. Baker specialty comes from specially selected Hemlock and Douglas fir faces beautifully brushed to obtain the utmost in design possibilities.
- ***Oversized Panels for Marine and other uses.***
  Mt. Baker's emphasis on progress is typified by installation of new scarfing equipment to provide oversize panels for all purposes.
- ***Texture One-Eleven***
  The popular, new Texture One-Eleven is available at Mt. Baker. This new panel is ideal in style and size for exterior finish.
- ***Exterior Plywood***
  A standard Mt. Baker item is Exterior, hot pressed plywood—using only phenolic resin adhesives. Ideal for any outside construction regardless of weather.

HERE is an air-view of Mt. Baker Plywood Inc., Bellingham, Washington—where the Customer is king! It's the home of the finest plywood products. Mt. Baker plywoods are all rigidly inspected. Each panel, interior or exterior, is hot pressed using 100% phenolic resin adhesives. All shipments are made in double door cars, steel strapped to prevent damage enroute.

MT. BAKER PLYWOOD, Inc.

2929 ROEDER AVENUE PHONE 6700 TWX Bx 93 BELLINGHAM, WASHINGTON

FURAFIL* 100 *is in this* PICTURE

This Alaskan scene pinpoints the location of one of the many plywood mills using Furafil 100.

Photo courtesy of F. J. Shelton, Reichhold Chemicals, Inc.

From California to Canada, from Canada to Alaska, Furafil 100 glue extender is finding increasing use in Douglas fir plywood because of the unique properties and characteristics of this product. These properties and characteristics include:

- *Availability in quantity the year around*
- *Ability to thicken and control glue viscosities when subjected to uncooked alkali digestion*
- *Excellent spreadability*
- *The glue line shows up well on the core permitting ready inspection of the glue spread.*

Write for a sample of Furafil 100 and try it with the glue recommended by your supplier.

* Reg. U. S. Pat. Off.

The Quaker Oats Company CHEMICALS DEPT.

344-C, The Merchandise Mart, Chicago 54, Illinois
Room 544-C, 120 Wall St., New York 5, N. Y.
Room 444-C, P. O. Box 4376, Portland 8, Oregon

MATTISON 303 *Stroke Sander*

INCREASED PRODUCTION– BETTER QUALITY

UNITED STATES PLYWOOD CORPORATION

Manufacturers and Distributors of Wallwood Plywood and Allied Products

Seattle Office · 4900 Fourteenth Avenue West · Seattle 99, Washington

January 22, 1954

Mattison Machine Works
Rockford, Illinois

Attention: Mr. W. C. Hagstrom

Gentlemen:

With reference to your inquiry about our experience with the Mattison #303 Hydraulic Stroke Belt Sander.

In the latter part of 1951, we installed a 10' Mattison #303 Double Belt Hydraulic Stroke Sander for sanding flush doors and hardwood faced panels. Several months ago we installed a second machine of the identical type.

We are particularly pleased with the absence of sniped panels due to the absolute accuracy of the hydraulic control mechanism on the sanding pad, which eliminates any possibility of overrun.

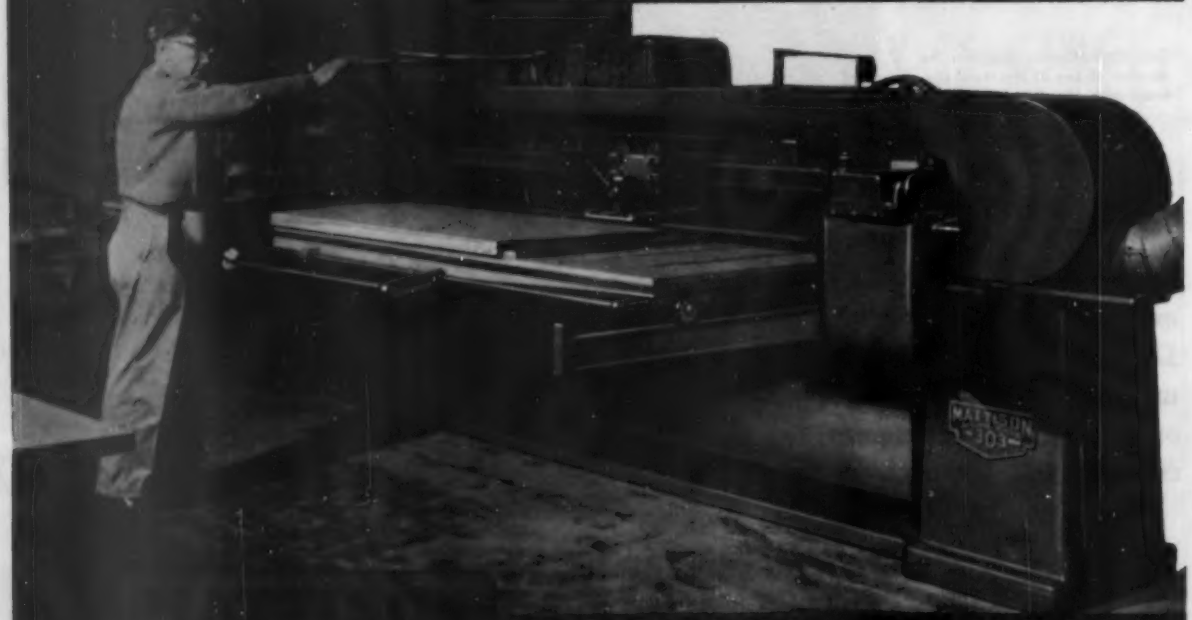
Our experience has been that we get increased production and a very high quality of sanding from the Mattison #303 Hydraulic Stroke Sander.

Yours very truly,

UNITED STATES PLYWOOD CORPORATION
(Wash.)

Keith Gunderson

Keith J. Gunderson
Plant Manager



MACHINE WORKS

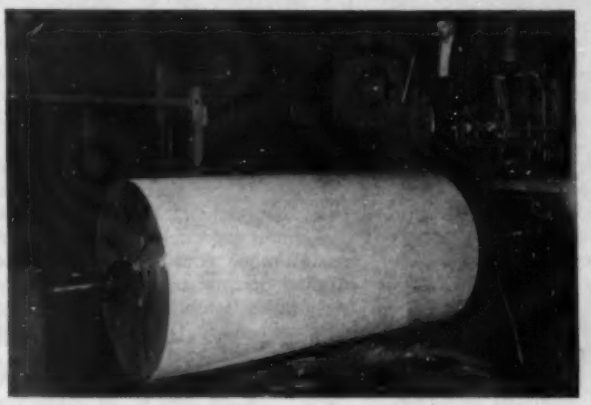
ROCKFORD · ILLINOIS

"YOU'RE INVITED! We will have in operation at the Grand Rapids Machinery Show May 5-6-7 a MATTISON 276 Electric Moulder, a MATTISON 202 Fast Feed Ripper, a MATTISON Automatic Shaping Lathe, and a MATTISON 303 Stroke Sander. Attend the show and FPRS meeting. See these machines operate!

FIRST CHOICE!

IN THE VENEER INDUSTRY

KIRK HILLMAN "All Electric" drive systems give complete synchronization of veneer speed through the entire green end at Alberni Plywood Division, MacMillan & Bloedel, Ltd., Port Alberni, B. C.



Smooth, full power at any peeling speed up to 550 fpm plus instant stopping and finger tip control make the KIRK HILLMAN drive the most popular lathe drive on the Pacific Coast.

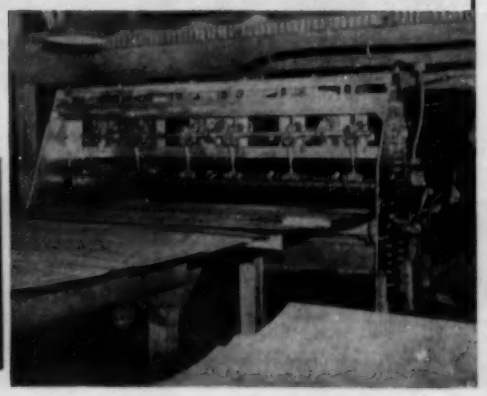
Compact, job-designed, tipple operator's control station eliminates operator fatigue. Automatic tipple hoist control plus preset tray selection permits non-stop peeling operation.

Unusual variable speed unloading feature of KIRK HILLMAN multi-motor tray drives permits rapid closing of any gaps and complete elimination of overlapping as veneer flows onto clipper table. Minimum breakage and maximum clipper production are assured.

Clipper feed tables powered by KIRK HILLMAN drives permit highest possible recovery combined with high speed clipping of clear sheets. Features include wide speed range, quick stopping, instant reverse.

Each of eight trays is individually powered with an adjustable speed motor and is automatically synchronized with output speed at lathe. No clutches nor intricate mechanical linkage between trays required.

For the finest of engineered electric variable speed drives for the lumber and plywood industries . . . write or call:



C. KIRK HILLMAN CO.

MANUFACTURERS OF ELECTRICAL DRIVES FOR:
SAWMILL CARRIAGES — PLANER ROLLS — VENEER LATHES
3201 FIRST AVENUE SOUTH ELLIOTT 6561 SEATTLE 4, WASH.

PLYWOOD
BIG INDUSTRY, BUT FEW GIANTS

With costs high and profits low, hardwood plywood faces increased foreign competition

The hardwood plywood industry is not a mass production industry. The average number of employees is 150 and the capital investment ranges from $500,000 to several millions of dollars. All the mills are privately owned except for a few (6) companies which are publicly owned. The plants are located in small communities adjacent to the timber supply. In many cases the hardwood plywood mill is the principal employer in its community.

The production of hardwood plywood is not a highly mechanized operation. Hand labor constitutes a major portion of the production process and labor costs are as high as 40% of the total costs. Selection of veneer and inspection of panels are governed by the appearance and cannot be mechanized. The machines required are few in number and are common to all mills throughout the world. Technical or mechanical training is not a qualification for a worker's employment.

Hardwood plywood is a basic material for the furniture, desk, cabinet, door and woodworking industries.

The hardwood timber in the United States does not grow in vast tracts covering extended areas. Hardwood logs come to market from farm lots and small tracts of timber land. In many instances the farmer cuts his own trees and markets his logs. In other cases logs are assembled by log buyers in concentration yards. In every case the veneer log is the cream of the crop and commands a premium price. As veneer logs are obtained from tracts where lower grade logs predominate, in many cases the price that the veneer log will command determines whether the tract will be logged. In all cases the price of the veneer logs keeps the lower grade log price in balance so that the lower grade log comes to market at a price that makes its use economic.

The fine grain of hardwoods provides a more finishable surface and what are known as figures that create the beautiful woods used in furniture and paneling. The manufacturing processes differ in that softwood production is practically entirely rotary-cut veneer of large size with panels laid up with single piece faces and backs. The hardwod plywood veneers are both rotary-cut and sliced with a large portion of the production in sliced veneers which must be matched and taped to make the face and backs of the plywood. In hardwood plywoods appearance is a primary factor.

Hardwood plywoods are made of many domestic and some foreign hardwoods. The principal domestic hardwoods are Birch, Oak, Gumwood, Walnut, Poplar, Elm, and Maple. In the foreign woods Mahogany predominates. Hardwood plywood mills are found in many of the states but the majority of the production is in the Southern, Lake and North Central States. The mills are not large. Production capacity ranges from 1,000,000 sq. ft. to a maximum of 30,000,000 sq. ft. per annum with only a handful of companies having over 10,000,000 sq. ft. of production capacity.

Hardwood plywoods fall into three specific categories based on construction of the panel, use and market. These are:

(1) VENEER CORE which is made of three or more plies of veneer. The panels are produced in thicknesses ranging from ⅛" to ¾" and in various sizes with only a small portion of the production in 4' x 8' panels. Its principal uses are furniture, cabinets, radio and television sets, paneling, doors, desks, etc. It is sold direct and through distributors. Appearance and smooth grain are the distinguishing characteristics. Veneer core production falls into two definite categories, namely; "captive production," where the producer uses his panels to fabricate a product; and market production, which is sold in the competitive market to users.

(2) LUMBER CORE—This is a laminate with veneers for faces and cross banding and lumber for core. The panels are thick, usually ¾" and up. Lumber core is a special-use product finding its way in furniture and similar items. It is comparatively high priced and not competitive pricewise with veneer core.

(3) CONTAINER GRADE—A special veneer core panel made for use in containers only. Appearance is not a factor. The vast majority of this production is "captive," the producers being the manufacturers of containers. The grade is not comparable to veneer core and it is not suitable as a substitute for veneer core.

The principal species from which imported plywoods are made are Birch, Lauan (Philippine Mahogany), Poplar, Oak, Okoume and Mahogany. The principal exporting countries and their principal species of wood are:

Finland	Birch
Japan	Lauan and Birch
Canada	Birch

Imported plywoods are veneer core panels produced to American grades, types, thicknesses and sizes. Phenol and urea resins are the adhesives

Hardwood Plywood Production, by Type of Core & Region

REGION	PRODUCTION OF PLYWOOD, M SQUARE FEET, SURFACE MEASURE							
	TOTAL, 1953*		FIRST QUARTER, 1953		SECOND QUARTER, 1953		TOTAL, 1952	
	Veneer Core Plywood	Lumber Core Plywood	Veneer Core Plywood	Lumber Core Plywood	Veneer Core Plywood	Lumber Core Plywood	Veneer Core Plywood	Lumber Core Plywood
New England States	220,000	1,700	57,783	532	56,851	334	(Individual	———
Middle Atlantic States	40,000	11,000	10,842	2,801	9,229	2,826	totals	———
Lake States	220,000	32,000	57,102	8,177	54,372	7,914	not	———
Central & Prairie States	115,000	28,000	29,428	7,374	29,803	7,414	available	———
Southern States	800,000	155,000	203,488	38,460	194,506	39,906	for	———
Pacific & Rocky Mtn. States	5,400†	3,000†	1,493†	1,376†	1,328†	1,224†	1952)	———
TOTAL – All Regions	1,400,400	230,700	360,136	58,720	346,089	59,618	1,231,454	192,504

* Final figures not available; totals are THE LUMBERMAN estimates.
† Excludes hardwood plywood production in West Coast softwood plywood plants.
Source: Bureau of the Census.

A Tremendous VARIETY of Uses...

BACKED BY Mereen-Johnson QUALITY

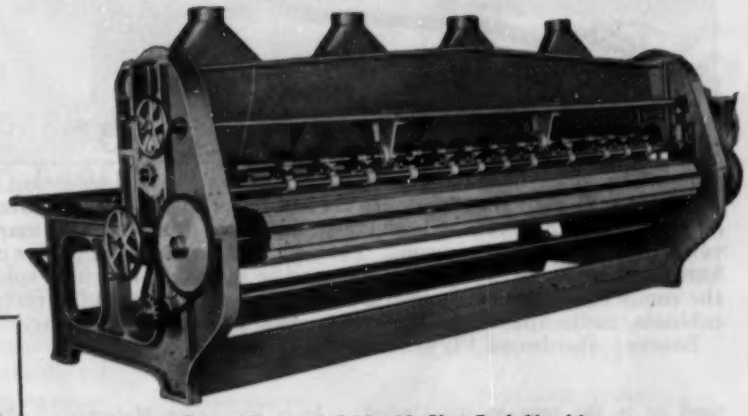
NO. 435

MULTIPLE CUT-OFF SAW EQUALIZER *and* GROOVER

IT'S BEST KNOWN AS A PLYWOOD SIZER. But this Mereen-Johnson machine has earned popularity in sash and door, furniture, cabinet and refrigerator factories, too. It will cut up long boards into short, accurate pieces . . . handle boards, panels or sheets of any size—cutting them perfectly square on both ends . . . cut any number of grooves of nearly every width on the same stock. It will even do these three operations *simultaneously*.

Special accessories permit its use for cutting multiple veneer, plywood and insulating material. It is often used as a slat bed cut-off and ripper . . . for dry saw cutting . . . for two-way cutting . . . and for grooving and trimming step-ladder sides.

Sizes run from 4′ to 24′. Let our engineers work with you to develop a combination unit that will fit your needs.



Rear View of 144x48 Slat Bed Machine

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Write for Bulletin No. 435

Mereen-Johnson MACHINE COMPANY

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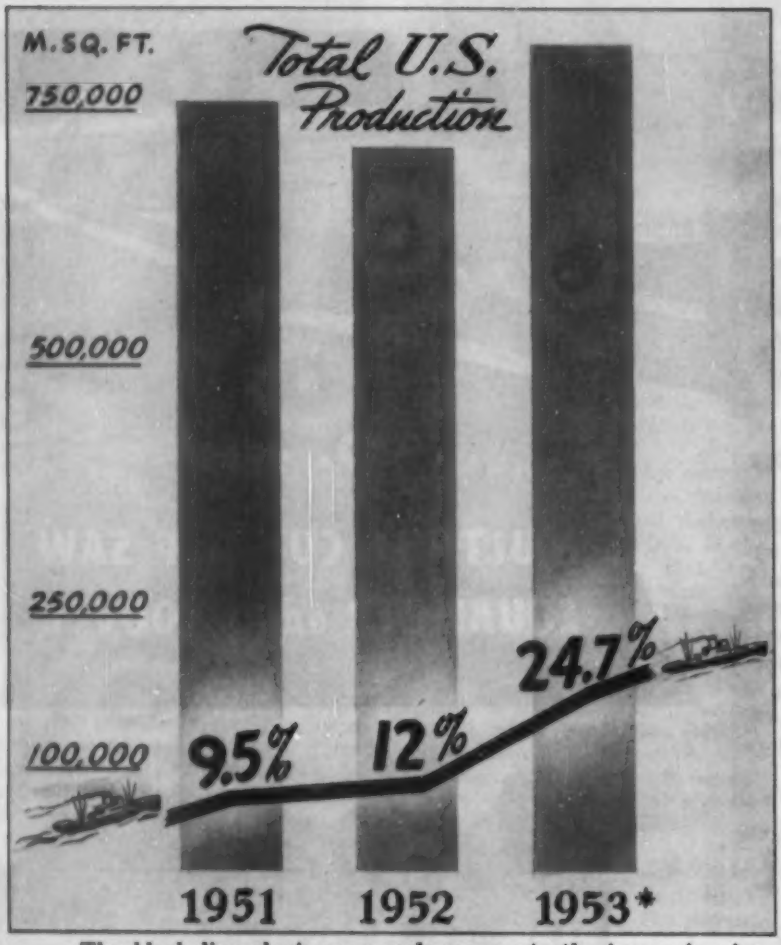
PLYWOOD

Comparison of Imports of Hardwood Plywood With U. S. Domestic Production



The black line sloping upward represents the increasing imports from foreign countries into the United States. The percentages as shown are the ratio of imports to domestic production of market veneer core hardwood plywood. The designation "market veneer core hardwood plywood" refers to the specific category which is sold in the competitive market to users, such as manufacturers of furniture, cabinets, radio and television sets, paneling, doors, desks, etc.
Source: Hardwood Plywood Institute.

used as is the case in the United States. Imported plywood is sold direct to users or through distributors.

Ralph W. Dempsey, who reports on the Philippine timber and lumber situation, told THE LUMBERMAN, "For the last two years, the Japanese have produced plywood of Apitong and Philippine Mahogany for the export market. In many cases this plywood bears a stamp "Produced from Philippine Apitong" or "Produced from Philippine Mahogany." Actually, this product was no better than any other mass produced Japanese product. The name "Philippines" was the selling point. Until the Japanese chemical industry produces a Phenol-Resin glue, of the Standard expected and demanded by the United States buyers, any Japanese plywood not made with the imported Phenol-Resin glue or glued in the United States, should be lightly regarded."

The influx of plywood from foreign countries is recent, there being no previous imports by most of the countries now sending plywood to the U. S. There is no precedent for any country exporting to the United States the quantities now being shipped to the United States.

Average Value of Total Plywood Imports by U. S.

1950	**—**	**$105.38 per M sq. ft.**
1951	**—**	**120.86 per M sq. ft.**
1952	**—**	**126.60 per M sq. ft.**
1953 1st 6 mos.	**—**	**91.46 per M sq. ft.**

The Hardwood Plywood Institute cites another factor which cannot be ignored, in consideration of the import problem as it affects the hardwood plywood industry is that the cost of building, modernizing and rehabilitating foreign plywood mills has been financed through American foreign aid funds. Foreign plywood production has been financed by the domestic industry's tax payments.

Production of Hardwood Plywood by U.S. W. Coast Softwood Plywood Plants

M sq. ft. ⅜" equivalent

1951	Jan. - Mar.	(Not available)
	Apr. - Dec.	54,305
	Full Year	72,000*
1952	1st Qtr.	16,882
	2nd Qtr.	17,925
	3rd Qtr.	21,638
	4th Qtr.	20,426
	Full Year	76,871
1953	1st 8 mos.	63,850
	Full Year	95,000*

*THE LUMBERMAN'S estimate.
Source: Bureau of the Census.

HPI Members Produce 60% of Market Output

The Hardwood Plywood Institute is a trade association representing 56 hardwood plywood companies having mills located east of the Rocky Mountains. The members of the Hardwood Plywood Institute are manufacturers of market hardwood plywood sold through distributors or direct to the users. According to the Bureau of Census reports there are approximately 122 companies manufacturing hardwood plywood for the market and of these the Hardwood Plywood Institute represents approximately 60% of the total production.

WHAT WENT UP IN SMOKE NOW GOES UP IN HOMES

DOWNINGTOWN HARDBOARD MACHINES HELP CONVERT LUMBER BY-PRODUCTS INTO PROFITABLE BUILDING MATERIAL

Downingtown Fourdrinier-Type Hardboard Forming Machines and Press Sections are playing an increasingly important role in a great new industry. Bark, slabs, chips and other lumber manufacturing by-products, which were once burned, are now being successfully and economically converted into hardboard for American homes. Pulp mills also use Downingtown Hardboard Machines to manufacture hardboards from available stands of hardwood, undesirable for pulp.

Downingtown Hardboard Machines are now operating in several important lumber producing areas and quickly repaying their costs in the profitable utilization of what was once "waste" material. Similar Downingtown machines are built to produce insulation and wallboards of all types.

A Downingtown Sales Engineer will be glad to discuss any of these machines with you. Or write for Bulletin 549.

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DOWNINGTOWN, PA.

West Coast Representative:
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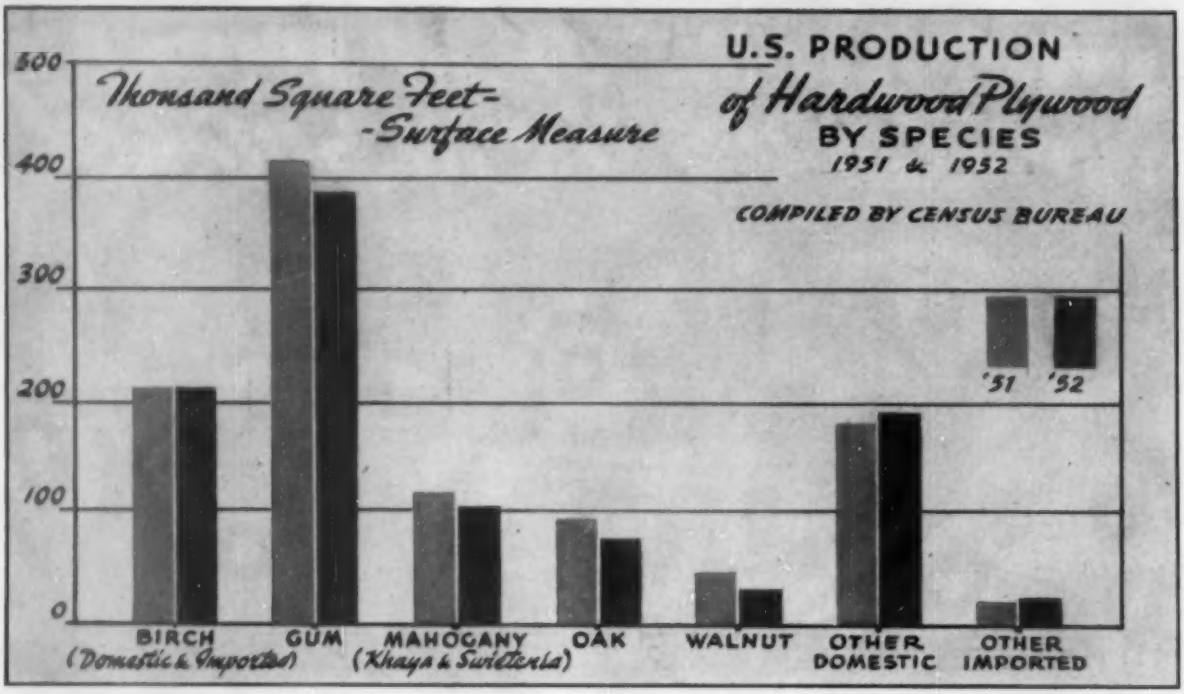
DESIGNERS AND BUILDERS OF PAPER BOARD AND FELT MACHINES SINCE 1880

MODERNIZATION IS PROFITABLE

PLYWOOD



Production of Hardwood Plywood by Type

M sq. ft., surface measure

	1951	1952
Technical type	10,256	1,114
Type I, waterproof .	29,635	23,611
Type II, moisture resistant	932,717	978,229
Type III, dry bond ..	127,944	92,639
Container & packing type	366,696	324,108
Total, All Types ..	1,467,248†	1,423,858†

† Excludes hardwood plywood produced in W. Coast softwood plywood mills.

Source: Bureau of the Census.

Western Hardwood Plywood Nears 100 Million Mark

Production of hardwood plywood in softwood plywood plants on the west coast is increasing, according to figures reported by the Bureau of the Census, Department of Commerce. At the rate of production for the first eight months of 1953, the total for that year should show nearly 100,000,000 square feet of hardwood plywood turned out. (See table this page.)

Many domestic species and several foreign woods are both sliced and rotary cut in a variety of types and patterns. The domestic woods include mainly cottonwood, birch, gum and alder, with some specialty panels being faced with maple, oak, walnut, black walnut and myrtlewood.

Philippine mahogany is a very popular face material, and it is being pressed by most softwood plywood manufacturers who are in the hardwood panel business. The mahogany is imported, largely from the Philippines, in both log and flitch form and either sliced or turned on a lathe. This product enjoys wide range of uses, all the way from furniture manufacture to interior and exterior home-building and decorating.

Hardwood plywood production accounts for approximately three per cent of the total output of west coast softwood plywood plants.

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Jackson Industries, Inc.
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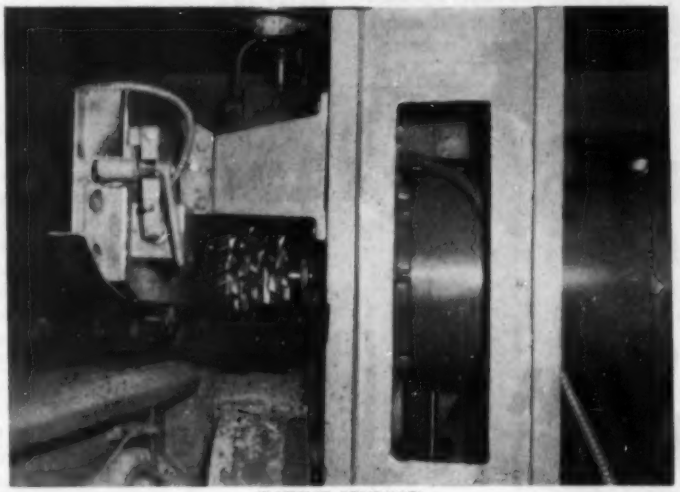
PACIFIC DUAL HEAD

NEWEST DEVELOPMENT IN PLYWOOD AND HARDBOARD TRIMMING



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A Combination Carbide Head

Smooth finish, skinner and Cut-Off

No chipping or slivering

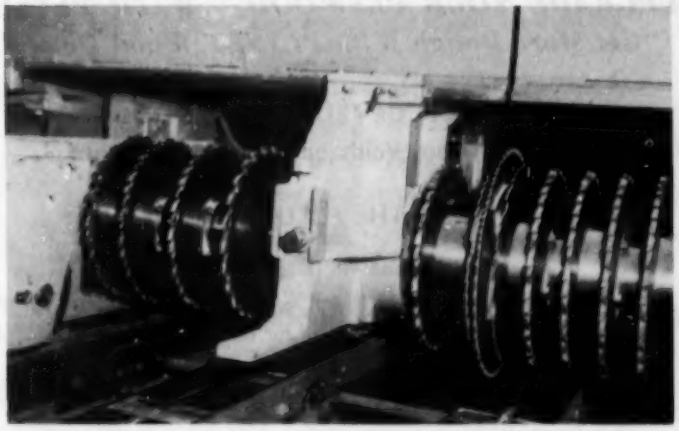
No tear-outs on corners

Hogs edgings for blower discharge

THE CARBIDE CUTTERS TO MAKE TEXTURE ONE-ELEVEN

The Cutters Engineered to Give You . . .

- Greater Production
- Better Quality Panels
- Longer Cutter Life
- Lower Maintenance Costs



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PLYWOOD

Progress Has Been Rapid in Bonding Plywood with Many Other Materials

A recent advance in the plywood field extends the uses of panels to a multitude of industrial and commercial applications.

It is a process involving the use of latex glue and a cold press has been developed for the binding of plywood with metals and other material, and in the Middle West and British Columbia the technique has been applied commercially.

Haskelite Manufacturing Co., Grand Rapids, Mich., is using the process to some extent, and in Vancouver, B.C., at Metply Industries (B.C.) Ltd., headed by Ron Dorset, a new plant is being built at Marpole to accommodate the increasing volume of business.

So far, plywood has been successfully bonded with aluminum, stainless steel, copper, lead, asbestos, fabric and linoleum. The resulting material offers lightweight and stiffness of waterproof plywood combined with the strength of metals in sheets which include fire-resistant, heat and sound insulating, impact-resisting qualities and an almost perfect vapor barrier.

In addition to metal and other facings on plywood, the Metply process provides decorative wood veneer facings backed by metal for strength, high-rated dimensional stability and sealed edges as in the conventional product. Hardboard and fibreboard have also been bonded with metals, as well as plywood.

Mr. Dorset explains that the product has the quality of even expansion and contraction which will not allow a building face to become wavy or buckled due to temperature changes. Lightness and strength, insulation and total suspension of the facing, due to a complete bond with the plywood layer, are all major factors pointing to a wide range of applications in the transportation, construction and many other industries. The material can be sawn, bored and routed; bending and moulding in simple curvatures is possible. In the metal-backed decorative wood veneer version, it can be bent, formed or stamped to almost any shape or size, and worked with all normal woodworking tools.

In addition to installations in private homes, the product has won favor in hospitals and industrial buildings and construction projects, such as at Kitimat, B.C., where a residential area is being developed by Aluminum Co. of Canada.

Mfg. by
LONGVIEW PAINT AND VARNISH CO.
LONGVIEW, WASH.

Distributed by
VAN WATERS & ROGERS
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UPGRADE YOUR PLYWOOD — WITH PLYSET
"Get More Dough With PLYSET Wood Dough"

A NEWLY DEVELOPED PRODUCT
For Filling Core Voids and For Face Patching

AVAILABLE IN THE FOLLOWING GRADES:

Regular and No. 1 (gun grades)
Hand Grade and Special Hand Grade (Heavier Viscosity)
Can be used by hand and for face patching.

COMES PACKED IN ONE AND FIVE GALLON CANS

PLYSET IS SUCCESSFULLY USED BY OVER 90 PLYWOOD PLANTS IN OREGON, WASHINGTON AND CALIFORNIA

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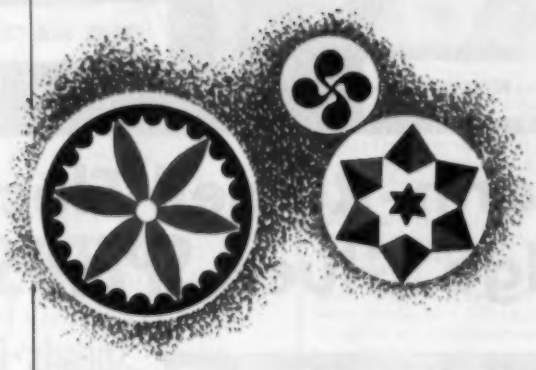
DISTRIBUTORSHIPS INVITED IN MID-WEST, SOUTH AND EAST.

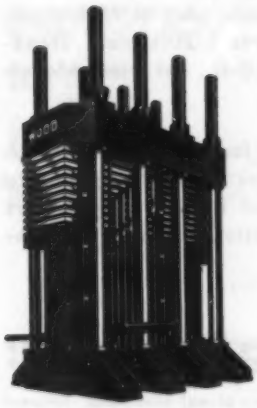
Progress in Veneer Log Grades

Establishment of a universal set of veneer log grades for southern hardwoods used in the veneer and plywood industry in the South is the objective of a comprehensive study being conducted by Duke School of Forestry, Durham, N.C. Good progress has been achieved. Study has involved examination of more than 6000 veneer blocks, and an interpretation of visible defects upon the quality of the producible veneer. This work was completed last summer. The second section, a study relating to volume-wise study of various grades of veneer that may be produced from blocks possessing a specific number and kind of defects is in process and is to be concluded at an early date.

Do you believe in hex signs?



In Pennsylvania Dutch country, the hex sign on the barn is mighty important. The farmer has confidence in its power to protect against evil. In the business world, customers believe in, and rely on, the name of the manufacturer. For instance—to people in metalworking, woodworking, rubber and plastics, the R. D. Wood name is a sign of real value in hydraulic presses . . . good presses that turn a profit for them year after year. To you as a buying influence, the 150-year-old Wood name can mean a lot, too. Economy and efficiency in production, for one thing. If you like, we'll send you a descriptive catalog.



IN WOODWORKING, THE PAYOFF'S AT AN R. D. WOOD PRESS LIKE THIS ONE!

This 3,675-ton hydraulic press is designed to turn out hard building boards. Built with ten openings, it can accommodate twice that number if desired. Platen size is 54" x 198" x 3". R. D. Wood presses are made in a wide range of sizes, and for many uses. Ask for catalog, and for engineering aid—both yours without obligation.

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Mann-Russell Electronic Veneer Edge Gluer *SPEEDS PRODUCTION!*

Infeed end of the Mann-Russell 100-inch Veneer Edge-Gluer. Random-width stock (with glue-edges) is fed onto moving belts by the operator. Belts carry veneer through gluing section (center of top picture) where high frequency bonding takes place, and continuous veneer web emerges (right of top picture).

Typical veneer-clipper placed at the outfeed end of the Mann-Russell Veneer Edge-Gluer. Usually, offbearing rollers feed the continuous veneer web from the gluing section into the clipper. (Clipper and offbearing rollers not provided as a part of the Mann-Russell installation).

Speeds Over 30 Lineal Feet Per Minute

At variable and continuous speeds and in a flat plane, the Mann-Russell Electronic Veneer Edge-Gluer bonds veneers of random widths, soft or hard woods, core or face stock, sliced or peeled in thicknesses down to 1/20th inch. Standard sizes are for panels of 4, 8, or 10-ft., net trim. Models also available in special sizes.

These machines are the result of long years of research and development in the field of electronics, as applied to industry. Mann-Russell Veneer and Lumber Edge-Gluers are successfully speeding up production in plants throughout the United States and Canada.

These are the Big Features:

- **Speeds of over 30 lineal feet per minute on veneer.**
- **Perfect edge-register of joints in continuous production.**
- **"Parallel Bonding" (Pat. No. 2,434,573) is instantaneous, sure and permanent.**
- **Variety of models to meet specific needs for veneer and lumber.**
- **Flat-plane eliminates internal stress while gluing.**
- **Generator and press sold as package unit; one responsibility.**
- **No conduction heat is applied; moisture content unaffected; no scorched surfaces or stored heat to disperse. Glue line and squeeze-out solid set throughout; panels ready to process immediately after edge-gluing.**

Write us your problem.

Mann-Russell Electronics

NORTHWEST SYNDICATE, INC.
South 23rd at Pacific Ave.
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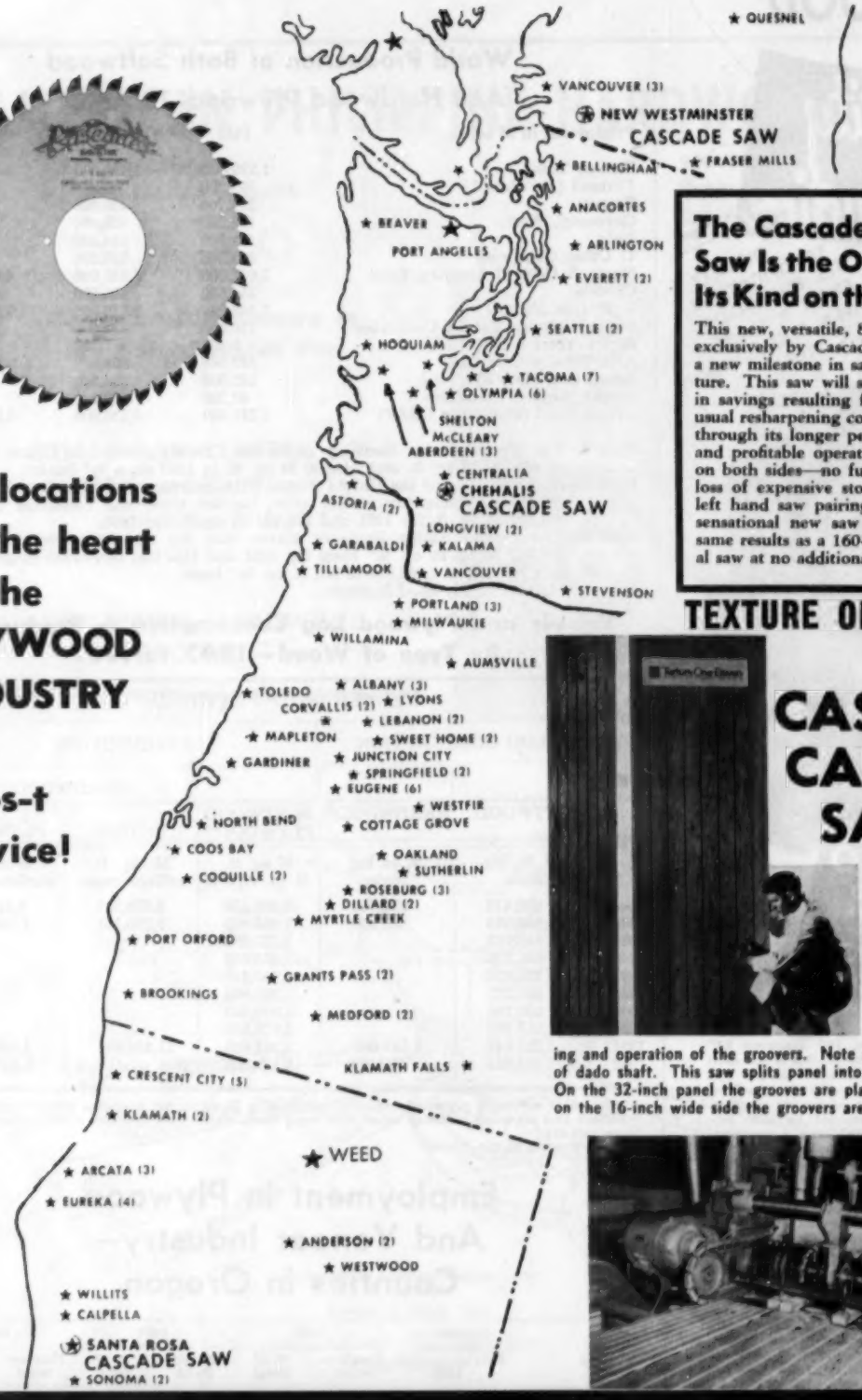
3 locations in the heart of the PLYWOOD INDUSTRY for f-a-s-t service!

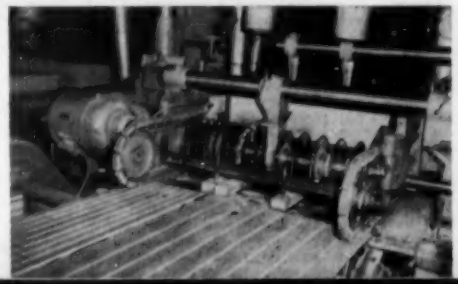


The Cascade Twin-Cut Saw Is the Only One of Its Kind on the Market!

This new, versatile, 80-tooth produced exclusively by Cascade Saw establishes a new milestone in saw blade manufacture. This saw will soon pay for itself in savings resulting from reduction of usual resharpening cost, and principally through its longer periods of precision and profitable operation. Smooth cuts on both sides—no fuzzing, splintering, loss of expensive stock—no right and left hand saw pairing necessary. This sensational new saw will produce the same results as a 160-tooth conventional saw at no additional cost.

TEXTURE ONE-ELEVEN with CASCADE CARBIDE SAWS

Below is a closeup of the "heart" of the Greenlee Double End Tenoner manufacturing Texture One-Eleven showing Cascade carbide-tipped groovers. Operator has removed metal hood to show spacing and operation of the groovers. Note splitting saw in center of dado shaft. This saw splits panel into 32 and 16 inch parts. On the 32-inch panel the grooves are placed four inches apart; on the 16-inch wide side the groovers are separated two inches.



Inquire by writing, by phone, by wire.

Cascade Saw & Tool Company

Phone 8-3339	Phone 5360-J	Phone 658
P. O. Box 179	P. O. Box 1147	314 Columbia St. East
CHEHALIS, WASH.	SANTA ROSA, CALIF.	NEW WESTMINSTER, B. C.

Made in 3 sizes, 36" diameter; 64" diameter; 72" diameter, this is the most flexible, versatile chipper design now available to chip producers, providing quantity production of quality specification-size chips demanded by pulp producers . . . operating with a minimum of slivers, sawdust and chip rejects . . . economically priced . . . easy to maintain . . . few parts to replace . . . low maintenance cost. MURCO high speed multi knife chipper can be used as a portable unit, mounted on skid or trailer for Diesel engine drive. MURCO design is a result of more than 30 years experience in the manufacture of pulpwood chippers . . . MURCO chippers built in 1923 are still performing efficiently.

WRITE for complete proposal telling us size of largest slab or edging, volume of wood to be processed per hour, choice of drive and whether chips will be pneumatically conveyed.

MURCO
D. J. MURRAY MANUFACTURING CO.
MANUFACTURERS SINCE 1883
WAUSAU - WIS.

World Production of Both Softwood And Hardwood Plywood–1950-52

Production in M sq. ft.	1950	1951	1952 (estimated)
Europe Total	1,199,000	1,496,000	1,320,000
Finland (see Note 1)	255,300	345,400	256,300
France	117,700	158,400	157,500
Germany, West.	409,200	528,000	460,900
Italy	121,000	154,000	154,000
11 Other Countries	325,380	310,200	289,300
North & Central America Total	3,652,000	4,136,000	4,015,000
Canada	314,600	405,900	407,000
U. S. (see Note 2)	3,333,000	3,729,000	3,630,000
South America Total 4 Countries	110,000	132,000	143,000
Africa Total 3 Countries	1,100	1,320	
Asia Total 4 Countries	187,000	291,500	297,000
Japan (see Note 3)	163,900	256,300	
Pacific Area 2 Countries	90,200	90,200	
Grand Total (excluding USSR)	5,247,000	6,116,000	5,830,000

Note 1—The United States Embassy gives the Finnish production figure for 1951 at 465,700 M sq. ft. and 344,800 M sq. ft. in 1952 on a ⅜" basis.
Note 2—In the figures for the United States, FOA estimates total hardwood plywood production including veneer core, lumber core, and container grade at 816,200 M sq. ft. for 1951 and 726,000 M sq. ft. for 1950.
Note 3—The United States Embassy states that the Japanese production was 536,823 M sq. ft. on ⅜" basis for 1951 and this has increased to an annual rate in 1953 of 1,082,856 M sq. ft. on ⅜" basis.
Source: Hardwood Plywood Institute.

Veneer and Plywood Log Consumption & Production By Type of Wood – 1943 to 1951

VENEER AND PLYWOOD

YEAR	LOG CONSUMPTION		PRODUCTION		
	SOFTWOOD[1]	HARDWOOD[2]	SOFTWOOD PLYWOOD[1]	HARDWOOD[2] VENEER	HARDWOOD[2] PLYWOOD
	M ft. log scale	M ft. log scale	M sq. ft. ⅜ in. equiv.	M sq. ft. surface meas.	M sq. ft. surface meas.
1943	659,479	934,860	1,495,170	9,870,597	1,211,814
1944	646,946	885,960	1,484,889	9,270,351	1,166,243
1945	545,762	.....	1,222,382	.....	.....
1946	641,738	.....	1,436,065	.....	.....
1947	750,633	.....	1,700,446	.....	.....
1948	857,722	.....	1,953,883	.....	.....
1949	906,709	.....	1,976,649	.....	.....
1950	1,157,202	.....	2,675,580	.....	.....
1951	1,231,643	1,087,669	3,243,855	11,386,634	1,532,677
1952	1,303,605	988,918	3,153,909	Not available	1,423,858

[1]West coast softwood plywood industry, principally Douglas fir; includes some hardwood.
[2]Veneer and plywood industry other than west coast companies; includes some softwood.
[3]preliminary.
Source: Bureau of the Census.

Employment in Plywood And Veneer Industry– Counties in Oregon

County	Number of Covered Establishments 1952	1952 Employment	1952 % of Total	1951 Employment	1951 % of Total	1948 Employment	1948 % of Total
State Total	54	10,783	100.0	8,852	100.0	5,906	100.0
Linn	6	1,951	18.1	1,986	22.4	1,656	28.0
Douglas	11	1,892	17.5	1,435	16.2	990	16.8
Coos	7	1,659	15.4	732	8.3	349	5.9
Lane	10	1,536	14.2	1,470	16.6	985	16.7
Multnomah	6	1,516	14.1	1,424	16.1	1,069	18.1
Other Counties	14	2,229	20.7	1,805	20.4	857	14.5

Source: State of Oregon

AMERICAN PHILIPPINE HARDWOOD CO.

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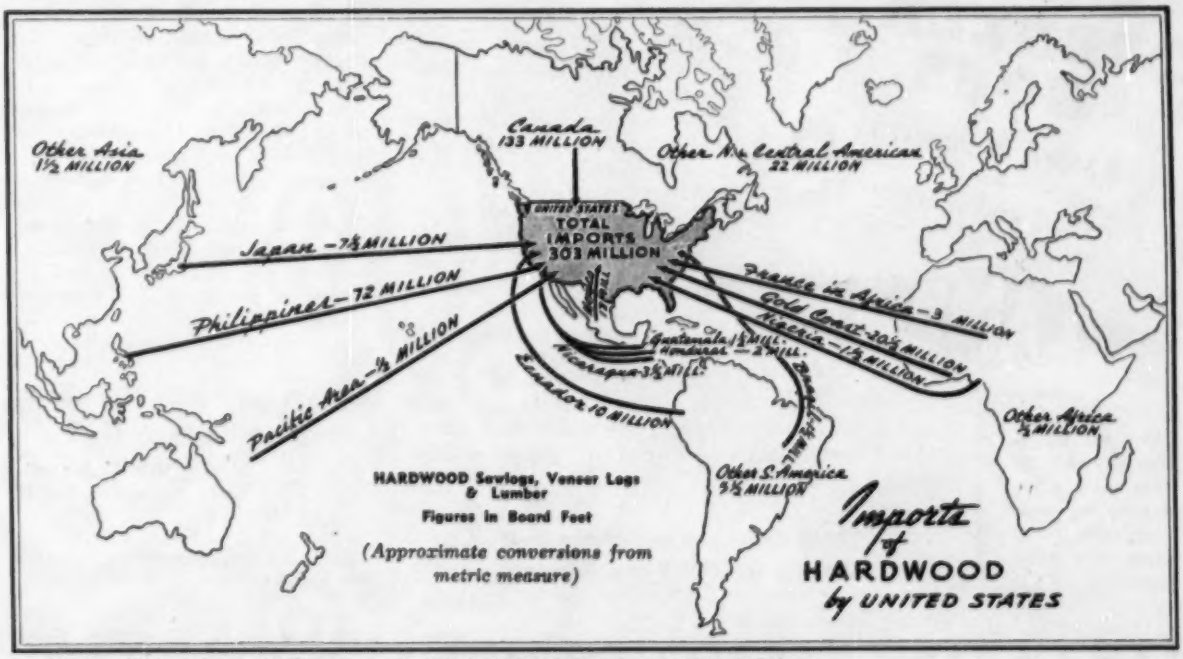


For latest available full year (1952); source—Food & Agricultural Organization—United Nations.

Canadian Lumber

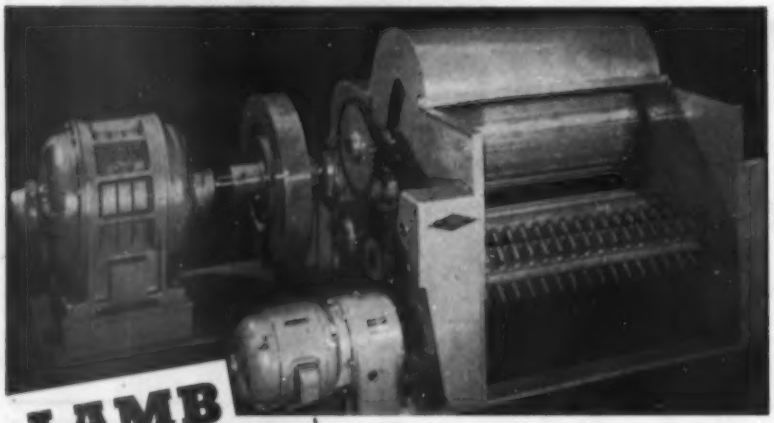
The Dominion Bureau of Statistics at Ottawa, Canada, reported reports the following figures: there are 301 sawmills (102 on the coast, 199 in the interior); 3,075,000,000 board feet of lumber was cut during the first ten months of 1953. 35% of the cut went to the U. S. water and rail; 32% went to Canadian destinations; 12% went to the United Kingdom and 8% to other countries. 13% went to markets not otherwise classified.

PLYWOOD

Production of Hardwood Veneer by Regions

Region	Veneer, M square feet, surface measure — Total, all types 1952	1951
Total, all regions	10,345,682	11,061,946
New England States	827,097	1,015,958
Middle Atlantic States	496,343	(d)
Lake States	1,174,079	1,347,676
Central and Prairie States	1,167,096	1,350,145
Southern States	6,623,872	6,723,937
Pacific and Rocky Mountain States	57,195	(1)

(1) Not available
Source: Bureau of the Census



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LAMB

"The above heavy duty high speed ROLL FEED HOG enables feeding at greater speed than with other feed tables giving greater capacity and more uniform distribution of waste throughout the entire mill conveying system.

Maintenance costs are reduced by using the grizzly roll which acts to break up curled veneer trim and allows small bark, gravel and dirt to pass directly into the fuel conveyor without damaging the knives.

LAMB HOGS are available in five sizes, 24-inch to 48-inch width of cutting face, with horizontal or inclined chain or belt feed table, horizontal roll feed, or angle feed by gravity or shaker hopper."

LAMB HOGS have been in service for many years in the plywood and veneer plants of the United States and other countries.

• • •

Let us quote you on the hog most suitable for YOUR requirements.

Manufactured by

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Sold in Western United States by

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Production Of Hardwood Veneer By Species In United States

M sq. ft., surface measure

	1951	1952
Birch (imp. and dom.)	970,579	895,896
Gum	2,561,158	2,561,086
Mahogany (Khaya and Swietenia	436,536	329,628
Maple	626,629	540,031
Oak	445,372	412,572
Yellow Poplar	988,669	916,659
Walnut	236,591	146,103
Other dom. woods	919,155	806,467
Other imp. woods	201,402	118,452
Total All Species	7,386,091	6,726,894

Source: Bureau of the Census.

Hardwood Veneer 1952

Hardwood veneer production during 1952 amounted to 10,345.6 million square feet, surface measure, according to the Bureau of the Census. This represents a decrease of more than 6 percent from the 1951 production of 11,061.9 million square feet, surface measure.

Based on 1951 totals, the production of each type of hardwood veneer decreased during 1952.

The species of veneer produced in 1952 followed the 1951 pattern. More than 60 percent of commercial and utility type veneer was produced from Gum and Yellow-poplar, over 55 percent of Face-type veneer was produced from Mahogany, Birch, and Oak, and more than 55 percent of special type veneer was produced from Yellow-poplar and Gum. However, based on 1951 first and second quarter reports, the principal species used in manufacturing container veneer are Gum (63 percent), Yellow-poplar (7 percent), and Maple (5 percent) while the principal species used for Flat type are Birch (57 percent), Maple (16 percent), Yellow-poplar (15 percent), and Gum (6 percent).

Consumption of Veneer Logs and Bolts in U. S.

M bd. ft., log scale

Region	Consumption* 1952	1951
Total, all regions	988,918	1,039,075
New England States	70,257	73,011
Middle Atlantic States	42,731	51,869
Lake States	70,061	87,585
Central and Prairie States	81,941	88,540
Southern States	718,194	732,493
Pacific and Rocky Mountain States	5,734	5,577

*Figures also include cants and unsliced flitches.
Source: Bureau of the Census.

Specify

*SILVACON

PHENOLIC GLUE EXTENDER

AN ACTIVE INGREDIENT IN THE GLUE LINE

Glues containing Silvacon offer these advantages:

- LONGER ASSEMBLY TIME
- GREATER TOLERANCE FOR HOT OR MOIST STOCK
- BETTER SPREADABILITY
- FEWER "BLOWS"
- HIGHER YEAR AROUND QUALITY

Silvacon's dependable and uniform quality is recognized throughout the plywood industry. Since it becomes an active ingredient in the glue line, it forms a bond of maximum strength. Its better spreadability means lower production cost and increased profits.

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*SILVACON
is a product of
WEYERHAEUSER TIMBER COMPANY
For full information write Special Products Division, Tacoma 1, Wash.

FLUSH DOORS

List of Flush Door Manufacturers in U.S.

The following list has been compiled from the latest available information through courtesy of the National Woodwork Manufacturers Association, Inc., and the traffic department of the Douglas Fir Plywood Association. It is estimated that at least ⅔ and probably more of the following listed flush door makers produce a hollow core door among their products.

LIST OF FLUSH DOOR MANUFACTURERS
(As reported in Survey of September, 1951)

Acme Door Corporation, Hoquiam, Wash.
Aetna Plywood & Veneer Co., Chicago, Ill.
Air-Lite Door Manufacturing Co., Dallas, Tex.
Algoma Plywood & Veneer Co., Algoma, Wis.
American Plywood Corp., New London, Wis.
Angel Novelty Company, Fitchburg, Mass.
Anson & Gilkey Corp., Merrill, Wis.
Atlas Plywood, Boston, Mass.

Bel-Air Door Co., Atlanta, Georgia and Los Angeles, Calif.
Bradley Plywood Co., Savannah, Ga.
Bridgeville Finishing Mill, Pittsburgh, Pa.
Brittain Colvin Manufacturing Co., Atwell, Ind.
Buffelen Manufacturing Co., Tacoma, Wash.

Caddo Door & Veneer Co., Shreveport, La.
Wm. Cameron Co., Waco, Tex.
Carnahan Manufacturing Co., Loogootee, Ind.
Carr Adams & Collier Co., Dubuque, Iowa
Central Door Supply Co., New York, N. Y.
Chicago Hardwood Door Co., Chicago, Ill.
Columbia Door Co., Portland, Oregon
Continental Imports, Inc., San Francisco, Calif.
W. D. Crooks & Sons, Williamsport, Pa.
Cutler Furniture Co., Cleveland, Ohio.
Curtis Companies, Inc., Clinton, Iowa and New London, Wis.
Cutler Furniture Co., Williamsport, Pa.

Davis Manufacturing Co., New Orleans, La.
Decor Door Company, Grand Rapids, Mich.
Doors, Inc., Richmond, Calif.
Durand Door & Supply, San Francisco, Calif.

Elliott Bay Mill Company, Seattle, Wash.
Empire Millwork Co., Corona, N. Y.
Everett Plywood & Door Co., Everett, Wash.

Farley & Loetscher, Dubuque, Iowa
Fresno Planing Mill, Fresno, Calif.
T. C. Fuller Plywood Co., Laurel, Miss.

Garson Sales Co., Highland Park, Mich.
General Plywoods, Louisville, Ky.
General Veneer Manufacturing Co., South Gate, Calif.

Hamptonite Door Co., Hampton, S. C.
Hardwood Products, Inc., Neenah, Wis.
Haskelite Manufacturing Corp., Grand Rapids, Mich.
B. M. Heade, Inc., Sweden
Hollenback-Bush Planing Mill Co., Fresno, Calif.
Hurd Millwork Co., Medford, Wis.
Huttig Manufacturing Company, Muscatine, Iowa

Ipik Plywood Company, Kenner, La.

Jamestown Plywood & Veneer Corp., Jamestown, N. Y.
Johnson Hardwood Door Co., Chicago, Ill.

Kennebec, Inc., Bingham, Maine
Kilpatrick Lumber Co., Oklahoma City, Okla.
Kochton Plywood & Veneer Co., Chicago, Ill.
John W. Koehl & Sons, Los Angeles, Calif.

Canada Flush Door Production Up in '53

Canada's production of flush doors was mostly concentrated in British Columbia last year, although a considerable volume has been manufactured in Quebec. Detailed statistics industry-wide are not available, but for the year ended September 30, 1953, MacMillan & Bloedel, biggest producer in the British Commonwealth, turned out 523,989 units, compared with 333,469 in the previous year, and it is probable that throughout the province close to 1,000,000 flush doors were manufactured, other important contributors being J. R. Murray, Ltd., and Brookes Woodworking Co., New Westminster.

In Eastern Canada, the leading manufacturer of doors is Rutherford & Co., Montreal, using mostly birch and imported Swedish pine.

Leland Flushwood Door Co., Sutton Bay, Mich.
Linden & Lindstrom, Sweden
Linn Door & Plywood, Albany, Oregon
Long Bell Sash & Door, Oklahoma City, Okla.

M & M Wood Working Co., Portland, Ore.
Medford Door Corp., Medford, Ore.
Meisen & Beaver, Belmont, Calif.
Mengel Company, Louisville, Ky.
Michigan Door Co., Grand Rapids, Mich.
Midwest Plywood, Detroit, Mich.
Mohawk Flush Doors, Inc., Elkhart, Ind.
Monarch Door & Manufacturing Co., Tacoma, Wash.
Morgan Company, Oshkosh, Wis.
Multi Plywood Wood Products, Inc., Olympia, Wash.

National Door, Detroit, Mich.
New London Door Company, New London, Wis.
Nicolai Door Manufacturing Co., Portland, Ore.
E. A. Nord Company, Everett, Wash.
Northport Flushwood Door Co., Northport, Mich.
Northwest Door Company, Tacoma, Wash.

Pacific Forest Sales Corp., Medford, Ore.
Pacific Manufacturing Co., Santa Clara, Calif.
Pacific Mutual Door Co., Kansas City, Mo.
Paine Lumber Co., Oshkosh, Wis.
Para Corporation, New York, N. Y.
J. C. Patterson, Alhambra, Calif.
Perma Board Corp., New York, N. Y.
Perry Door Co., Inc., Burbank, Calif.
Pioneer Door Manufacturing Co., Saginaw, Mich.
Plywood & Door Northern Corp., New York, N. Y.
Plywood & Door Southern Co., New Orleans, La.
Plywood & Door Western Corp., Los Angeles, Calif.
Plywood Plastics, Hampton, S. C.
Pontiac Millwork Co., Pontiac, Mich.

Raynor Manufacturing Co., Dixon, Ill.
Ready Hung Door Manufacturing Co., San Antonio, Texas.
River Rouge Door Co., River Rouge, Mich.
Roach-Musser Company, Muscatine, Iowa
Robb Manufacturing Co., Berkeley, Calif.
Rock Island Millwork Co., Rock Island, Ill.
Rockwell Manufacturing Co., Randolph, Wis.
Roddis Pywood Corp., Marshfield, Wis.

NWMA Reports Advance In Hollow Core Doors

Progress in capacity and production of flush doors during 1953, while it is estimated to have been substantial, is impossible to measure because of great number of small manufacturing plants set up throughout the country in recent years. Statistics on production are kept by the trade associations but they report that their figures are not representative of the industry as whole.

The National Woodwork Manufacturers Association, Inc., Chicago, (formerly the National Door Manufacturers Association), reports the following progress made in standardization procedures. "With regard to the commercial standard, we are now working on a proposed commercial standard for hollow core flush dors but we are not at liberty to publish it or distribute it as a standard because it has not yet been circulated to the trade nor has it been promulgated as a standard by the U. S. Department of Commerce."

This organization has, however, obtained promulgation by the Department on a commercial standard for hardwood veneered doors. This standard is CS171-50 and is currently available.

The trend toward decentralization of flush door manufacture is due to the fact that comparatively little machinery is needed. The sales area of the small plants is mostly local and shipment is easily accomplished by truck to nearby markets.

Screentite Door Co., Oakland, Calif.
Seattle Door Company, Seattle, Wash.
Silcrest Company, Wausau, Wis.
Simpson Logging Company, Seattle, Wash.
Standard Door Co., Minneapolis, Minn.

Taylor Sash & Door, Pensacola, Fla.
Thomason Plywood Corp., Fayetteville, N. C.
Truline, Glendale, Calif.

U. S. Plywood Corp., New York, N. Y.

Vancouver Door Company, Montesano, Wash.

Walled Lake Door Co., Walled Lake, Mich.
Warr Caston Lumber Co., Oklahoma City, Okla.
Weaver Manufacturing Co., Elkhart, Ind.
Weisberg-Baer Co., Astoria, N. Y.
Welsh Plywood, Memphis, Tenn.
West Coast Wood Specialists, Sacramento, Calif.
Western Door & Sash Company, Oakland, Calif.
Wisconsin Flush Door Company, Detroit, Mich.
Wisconsin Flush Door Manufacturing Co., Detroit, Mich.
Wisconsin Laminating Co., Chilton, Wis.

Young Wood Products Co., Novi, Mich.

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VENEER JOINTER

TYPE AFU — Length of cut, 165" with package 8" thick, giving maximum production. Fitted with patented second cut, producing a true, smooth edge for edge gluing or taping. Speed of cut, 3½ seconds. Fitted with electric eye and magnetic brake to assure absolute protection for careless operator.

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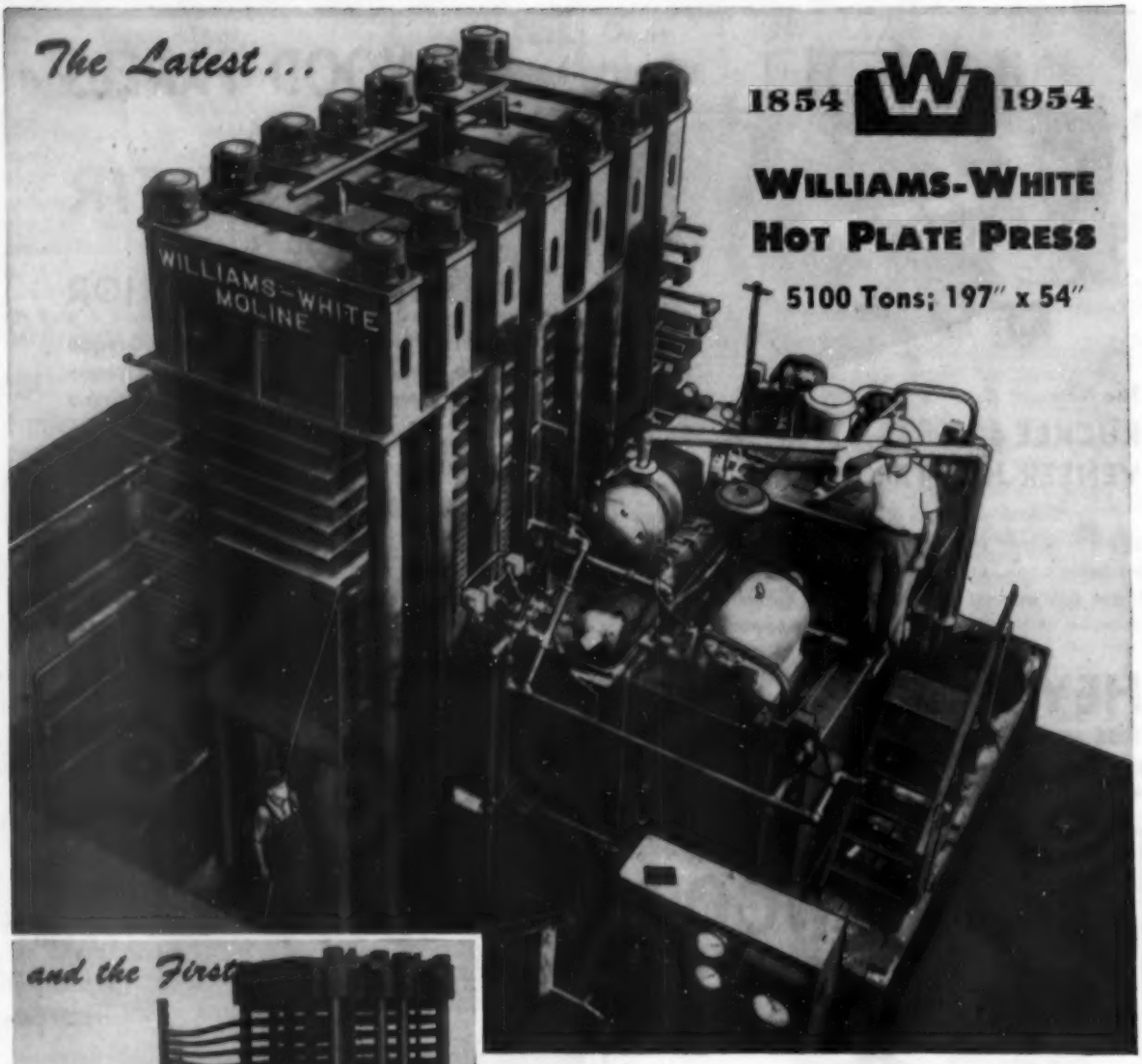
5100 Tons; 197" x 54"



and the First

As one of the highlights of their 99th year, WILLIAMS-WHITE & CO. designed and built the 5100-Ton Hardboard Press shown above. Capable of producing twenty 4' x 16' hardboard panels every cycle, this is one of the largest presses ever built. It weighs over 700,000 lbs. and stands four stories high, installed in a plywood plant in the Pacific Northwest.

The small press illustrated at left is WILLIAMS-WHITE & CO.'s initial entry into the Hydraulic Hot Plate Press field.

Avail yourself of WILLIAMS-WHITE & CO.'s long, wide experience in the solution of your hardboard, plywood or veneer production. Write direct or to one of our representatives.

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ALLIED NORTHWEST MACHINE TOOL CORP.
Portland, Ore.

WILLIAMS-WHITE & CO., Chicago, Office:
J. E. Maynard, Mgr.
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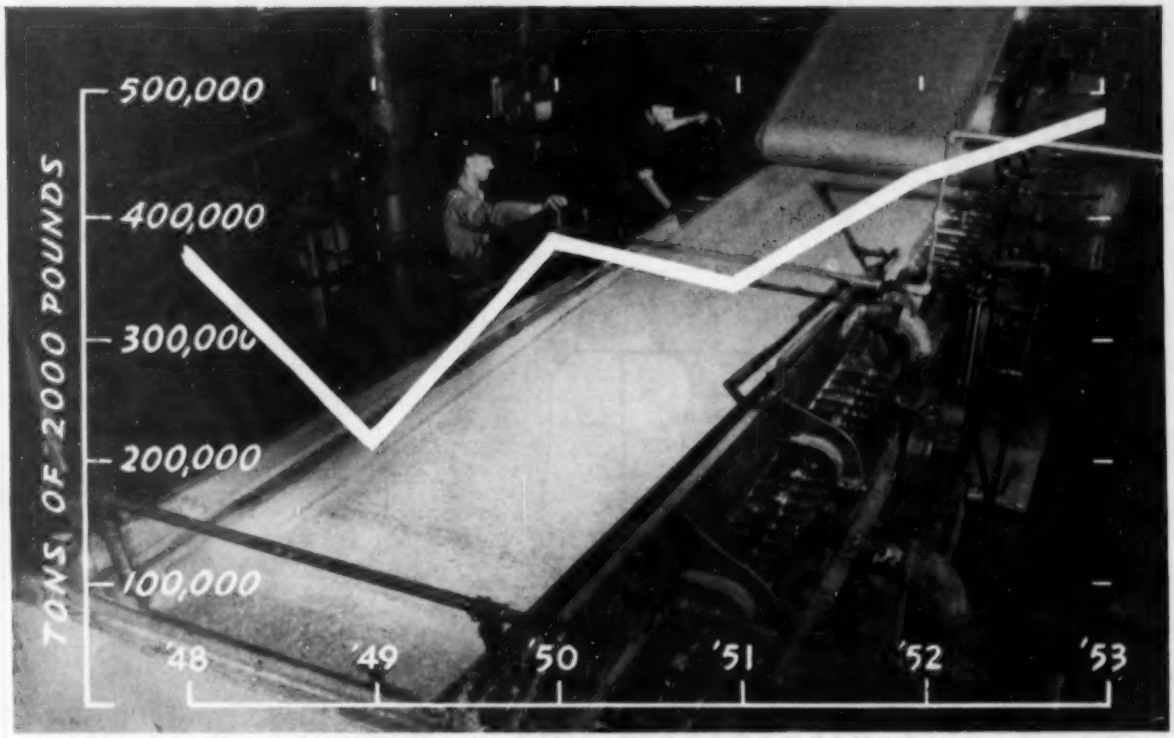
WILLIAMS - WHITE & CO.

MOLINE, ILLINOIS



THE TREND IN HARDBOARD PRODUCTION in the United States. Statistics by Bureau of Census.

Amazing Growth Continues

in an industry built up by sawmills, plywood plants & independent operators

The "Glamour Boy" of the forest industries. That's what the executive vice president of U. S. Plywood Corp. (Wash.) recently called hardboard. Very few other phases of the forest industries have expanded as widely in recent years as has the hardboard industry. And 1953 was another of the post-war years which saw a great deal of progress made in hardboard.

Not only has the production capacity of hardboard plants been greatly increased (see tables), but by vigorous salesmanship and development activity, many new and exciting uses for hardboard have been found. Hand in hand with production has come the amazing story Los Angeles becoming a major center for hardboard fabrication. Some of the commercial applications of hardboard in Los Angeles plants have far-reaching and significant implications as to what the future will bring.

In the last 12 months, many new plants either started production or started or announced construction. Production details of hardboard plants in both North and South America are shown on a table elsewhere in this section.

In this annual review of hardboard, THE LUMBERMAN includes coverage of certain other board products, such as Novoply, which are not "hardboards" in the strict sense. However, all the boards mentioned herein are constructed of sawmill or veneer leftovers or come from material which otherwise has little value either as lumber or for manufacture of other products; all are made in presses of one type or another; and all are used in similar fields, e.g., in houses, panelling or fabrication.

White Fir Now Used for Hardboard

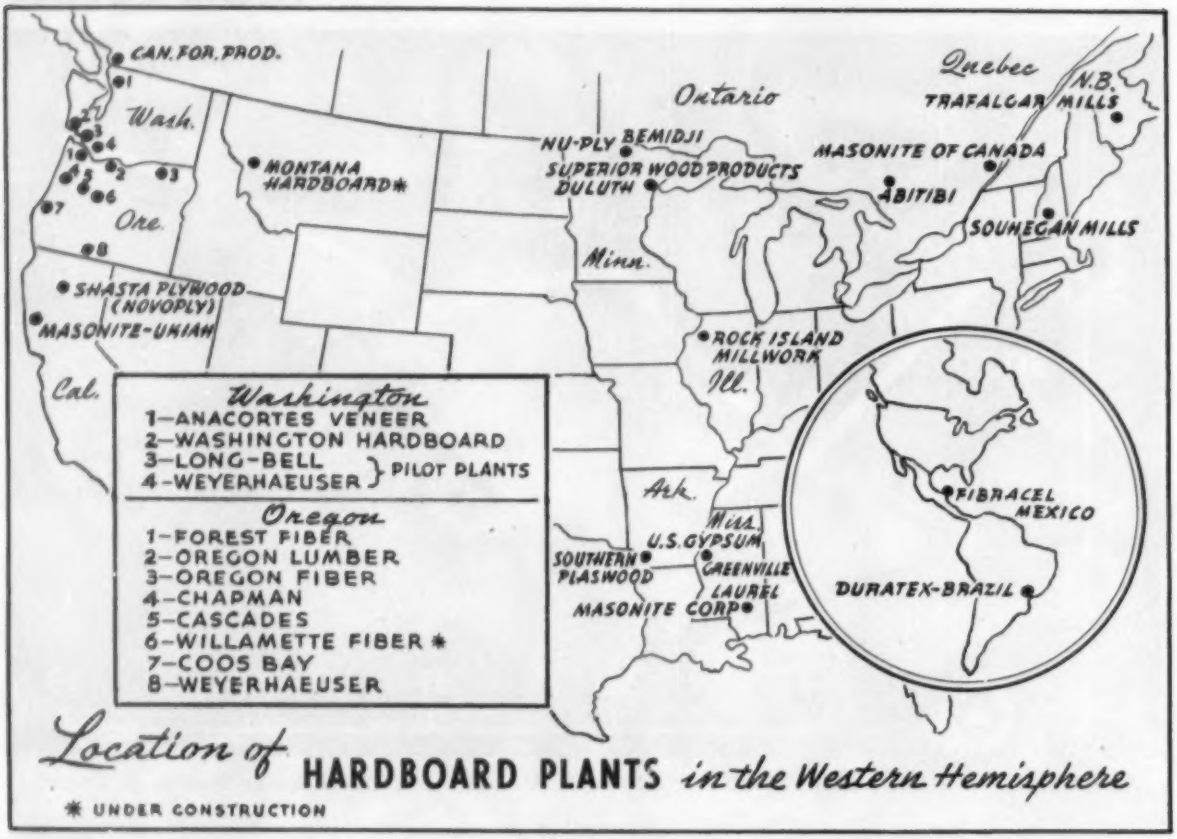
A notable highlight in the hardboard industry during the past year was the placing in production of the new plant of the Weyerhaeuser Timber Co., at Klamath Falls, Ore.

This new plant is distinctive in that three types of board will be produced, namely standard, treated and tailored-to-the-use. These later board will be made to fit the particular requirements of customers. The hardboards will be produced by the dry process. The basic raw material will be white fir.

The new plant was initiated by Clark C. Heritage, Weyerhaeuser Director of Development. R. D. Pauley, special products division manager, and J. R. Roberts implemented the project. General plant engineering was under the direction of the company's chief engineer, J. R. Abel of Tacoma.

High Capacity

General direction of the new plant is under Weyerhaeuser Timber Company's resident manager at Klamath Falls, Hugh B. Campbell. Plant superintendent is Jack Robinson, who was the original project engineer.



Location of HARDBOARD PLANTS in the Western Hemisphere

* UNDER CONSTRUCTION

Weyerhaeuser Sales Company has named R. T. Miller, St. Paul, to be manager of sales for the new plant.

The new plant will have an annual capacity of from 80,000,000 to 100,000,000 sq. feet of hardboard.

Amazingly Versatile Plant in Eastern Ore.

Oregon Fibre Products, Inc., Pilot Rock, Ore. subsidiary of Pilot Rock Lumber Co., inaugurated production within the past few weeks at its new $6 million plant making both hardboard and softboard from clean lumber by-product wood. This operation when on full three-shift production has 300,000 sqpare foot per day capacity of either hardboard (⅛ in. basis) or softboard (½ in.) and can produce both in combinations adaptable to market demands.

Each type of fiberboard, made by wet process, follows the same mat-forming route—through pulping section, fourdrinier forming machine, dryer and double-pass trimmer. Beyond this point the routes of hardboard and softboard separate, each going to its respective department for further processing into finished product.

Can Make 85 Products

The extensive finishing facilities, including the hardboard pressing section, are designed and equipped for complete processing of some 85 board products, including acoustical tiles, which the company will make.

This mill group—consisting of Pilot Rock's sawmill, affiliate Kerns Co. of Oregon furniture plant, and Oregon Fibre—establishes a new high in wood utilization in the state's pine region. The logs are hydraulically barked before entering the sawmill. Consequently all slabs, edgings and lumber trims from plant processes consist of clean wood suitable for converting into fiberboard raw material—chips.

125 Men Employed

Oregon Fibre manufactures its fiberboard products to meet U. S. Gypsum Co. specifications. USG distributes and markets the Pilot Rock hardboard and softboard throughout Western states area. Shipments are expected to extend as far east as Minneapolis. On 3-shift 7-day per week production the plant will employ around 125 workmen.

Officers of the company are, president, Elmer C. Kerns; vice president & treasurer, Al Moltke; vice president, Lowell Stockman; and secretary, Calvin Souther.

Managerial and key production personnel are General Manager O. B. Eustis; Chief Engineer C. C. Stewart; Board Mill Supt. Clarence Shepherd, Jr.; Finishing Supt. Don Barnes; Hardboard Supt. Carl Shaw; Fabricating Supt. Carl Livingston; Research Director Robert Granum; Warehousing & Shipping Foreman Bill Tolleson; Controller Don Woods.

Studies by Clark Keaton

How to find the optimum conditions for the resin and also what normal fluctuations in board values could be expected in daily production was the subject of a technical study made by Clark M. Keaton of the Adhesive, Resin & Chemical Division of the American-Marietta Co., in Seattle, Wash.

Organizations Performing Research in Hardboard

Elmendorf Research, Inc., Chicago, Ill.
Forest Products Laboratories Division, Dept. of Resources and Development, Ottawa, Canada.
Forest Products Laboratory, U. S. Forest Service, Madison, Wis.
Oregon Forest Products Laboratory, Corvallis, Ore.
Washington State Institute of Technology, Pullman, Wash.

Filer & Stowell

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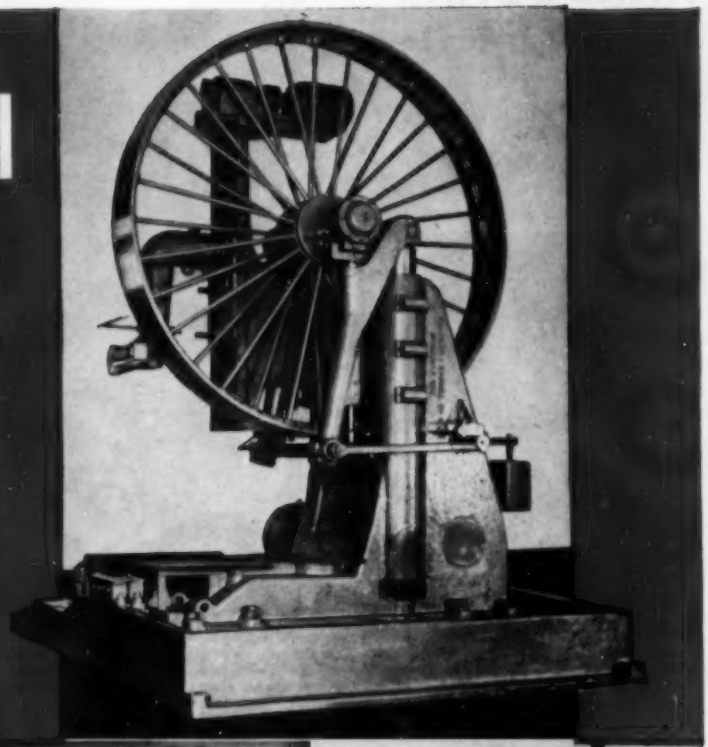
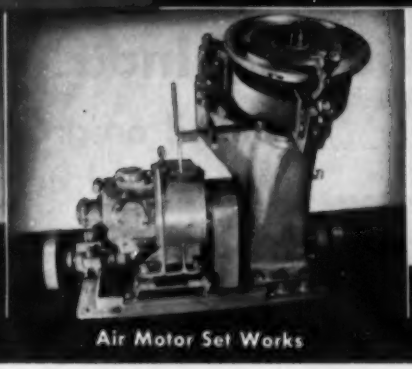


Air Dog Carriage



Air Motor Set Works

Air Dog Knee

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FOR 98 years the name Filer and Stowell has been associated with the finest in sawmill machinery. Years of manufacturing experience and engineering progress in all types of lumber operations have resulted in our complete line of machinery designed to meet the needs of the industry.

Many outstanding features of construction have set the pace under the toughest conditions with increased production efficiency, reduced maintenance costs and greater profits to you.

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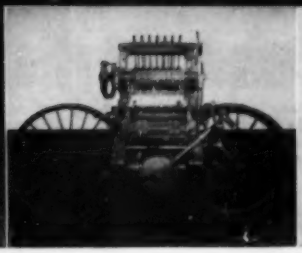
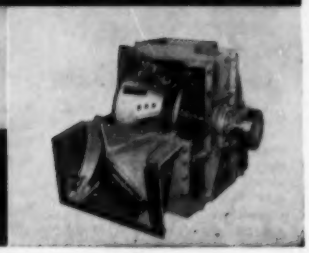
Vertical Band Resaw

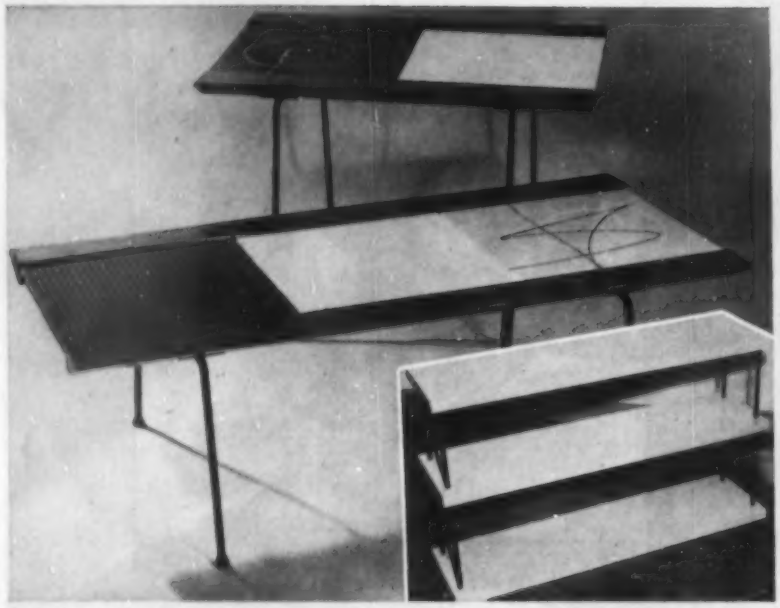
Heavy Duty Edger

Horizontal Resaw



Roller Bearing Hog





MASONITE, CUT TO SIZE by Pacific Board Fabricators, is lacquered and forms a sort of a modern furniture line by Variants of Los Angeles. The design is added by the furniture manufacturer. INSET—Modern furniture is being manufactured from Dinalite, which is a new hardboard product, given a decorative high-gloss finish, through a new process described in this issue.

DURON FABRICATED BY MUTONE Fabricators Inc. is used in this new Cliff Mays' ranch house in the sliding cabinet doors (¼" hardboard with 9/32" holes on 1" centers). This type of door eliminates the need for hardware—finger holes permit opening and closing of the doors.

Huge New Fabricating Industry

Based on greatly expanded use of hardboard, centers in So. California

Southern California, center of hardboard fabrication on the Pacific Coast, has witnessed considerable developments in this field during 1953. Several new companies have entered into this industry, one of the older organizations has constructed a new factory and office headquarters in East Los Angeles, and the applications of hardboard fabrication have increased and diversified during the past year.

Experts in this field estimate that the consumption of hardboard in Southern California showed a 50% increase last year over 1952.

One of the newest and most challenging developments has been the experimentation and perfection of methods of applying finishes to hardboard. A leader in this field is a new company, The Mica Corp., which is using Masonite as a base for laminating plastic-impregnated paper, bonded by heat-pressure to the hardboard. This method permits the photographing of any wood grain, or pattern, and by engraving process, transferring that grain or pattern to a highly absorbent paper which is dipped in resin, heat-treated, etc. The new Dinalite is being distributed by Pacific Board Fabricators.

A MANUFACTURING plant in the Los Angeles area has used Peg-Board in this manner: to keep a production record and display of progress in assembling aircraft parts, etc. Peg-Board is fabricated exclusively of Masonite.

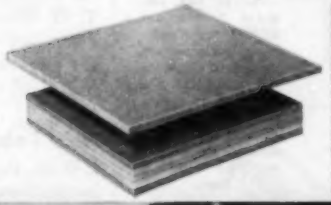
ROBERT T. TOPPIN, president of the Mica Corp. of Culver City, displays a section of a drainboard, fabricated from Dinalite bent to shape. Dinalite is a plastic-finish product, using Masonite hardboard as a base.

THE MICA CORP. has used its Dinalite as wall paneling —the panel on the lower section of this wall has a woodgrain pattern in light honey-color. The table between the two davenports is also made of Dinalite.

Intriguing Wood Design

Meyercord Company has made its first installation of a Fuson machine in a Los Angeles plant for trans-

LEBANITE / LEBANEX



Here is the nation's newest hardboard. *Above:* A sheet of *Lebanite*, smooth on both sides and extremely strong. *Below: Lebanex*, with plywood core and *Lebanite* faces, provides a perfect painting surface.

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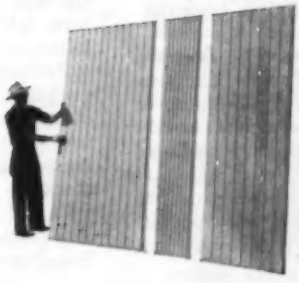
is making wood more useful

CUSTOM CUTTING

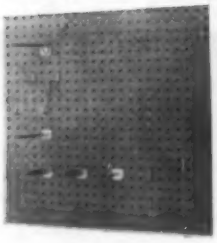
Cascades' Custom Cutting Division makes plywood and *Lebanite* products of almost any size or shape. A few of these are shown in the foreground. This division is equipped to bore, shape, rabbet, shiplap, bullnose or rout—exactly according to specifications or blueprints.

TEXTURE 1-11



One of the most exciting new products of the Custom Cutting Division is *Texture 1-11*, recently developed by D.F.P.A. and the subject of a new national advertising campaign. The ¼" deep grooves give plywood an appealing new appearance, which is gaining wide acceptance among contemporary architects and builders. Available in 16", 32" and 48" widths.

PERFO-BOARD



Advertised as *Perfo-Board*, this sheet of *Lebanite*, with its uniform pattern of square holes and a variety of movable attachments, makes a versatile wall storage or display unit.

TWO-FOOT PANELS

Cascades' *Two-Foot* Plywood Panels were recently introduced to supply the needs of the home craftsman. Measuring 1 foot by 2 foot and made in four standard thicknesses, the ¼" carton contains five panels; the ⅜", four panels; the ½", three panels; and the ¾", two panels, all at the same low price.

CASCADES PLYWOOD CORPORATION

Factories: Lebanon, Ore.
General Offices: Public Service Bldg., Portland, Ore.

CPC

HARDBOARD

HARDBOARD FABRICATORS INC. of Los Angeles turned out 60,000 radio cabinet sections on one order. Note the stock at the right of this picture, cut from one sheet of hardboard, bent on the machine shown here.

THE SAME COMPANY in Los Angeles had this perforating machine built to specifications and is adding another similar machine to double production of perforated board. The new machine will cut sheets up to 4x12.

ferring wood grain decals to hardboard. This machine consists of heated rollers which, by means of heat and pressure, transfer the lacquer decal (woodgrain) to the surface of the hardboard. The woodgrain decal is made by photographing the original piece of wood. The graining is then etched on steel plates and printed with lacquer to the paper. This is the paper which in turn transfers the same print to the hardboard. It is possible with this process to use as many as five colors to reproduce the woodgrain, reports Harry Keiper of the Graining Division of the Meyercord company.

Another method of applying a finish to hardboard is by wheel graining, using a steel cylinder with a wood grained etched on it. The cylinder is covered with ink and then rolled on the hardboard, giving a two-colorprint.

Early 1954 saw the "launching" of a house constructed with a wide use of hardboard paneling and roofing. The house is the design of Henry C. Cox. Ostling Mfg. Co. built the panels, using Forest Board ⅛" thickness both sides. The exterior wall panels are of hollow-core construction; the roofing panels are solid. Total thickness of the panels, 1⅜". Any type of wood finish can be applied to such panels. The panels are locked by a patented device.

Versatile New Finishes

Fir-Tex of Southern California, using Masonite as a base, has perfected a method of applying an enamel finish. This is a three-application process and produces a paneling sold under the name of Coralite for use in bathrooms, kitchens, etc., a tough, easy-to-clean surface. The enamel used is a thermo-setting, resin-type and a 400-degree heat is reached in the curing process.

Hardboard fabricators and those using hardboard are applying stains, wax, lacquer to the board; or are brush and spray-painting; even silk-screening.

The use of hardboard for finishing has brought about further improvement in the hardboard manufactured by the two companies which were the first manufacturers of hardboard and by the newer West Coast manufacturing mills. The improvement has been in the field of surface perfection—elimination of pits and defects, etc.

Use is expanding in perforated board for home and decorative use, for displays, and in industry, reports T. G. Ward, manager of Hardboard Fabricators and one of the pioneering experts in the hardboard fabrication field in Southern California.

New Fabricating Machines

With the new uses and demands for perforated board, fabricators have increased the volume from their perforating machines. Hardboard Fabricators has added a new machine for this purpose and has doubled its production.

Nutone Fabricators Inc. has installed a new automatic perforating machine by Stampco at its new plant in East Los Angeles which fabricates Duron, a US Gypsum hardboard.

Nutone Inc. has been formed to develop specific applications of perforated Duron in the display fields. This company, under the direction of Ted Poyser, technical expert, is equipped to engineer the fabrication of a complete unit of hardboard from design stage to its specific use.

New Use of Square Holes

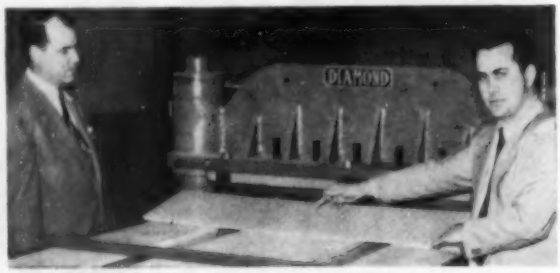
W. L. Dixon Co., fabricators of Lebanite in Los Angeles has engineered the production of its Perfo-Board with square rather than round holes and has developed, with Cascade Plywood Corp., manufacturers of Lebanite, a line of hardware designed for use with PerfoBoard. The two companies are working closely together to coordinate the manufacture, fabrication and distribution of Lebanite.

Perforated board is now being packaged by several hardboard fabricators in "kit" form, ready for home use or the "do-it-yourself" trade. Nutone packages, for example, six sheets to a carton.

Pacific Board Fabricators, exclusive fabricator on the West Coast for Peg-Board (a Butler registered

(Continued on Next Page)

A REVOLUTIONARY DEVELOPMENT in the hardboard industry: a Panel Aire home, built near Los Angeles, using hardboard in the exterior panels and roof. Forest Board, 4x8 sheet ⅛" thick, tempered, was fabricated by Ostling Mfg. Co. of El Monte to form panels with an overall thickness of 1⅜". The wall panels are of hollow-core construction, egg-crate style; the roof panels are solid wood with hardboard.



FABRICATING HARDBOARD, "Lebanite," is done by W. L. Dixon Company on a Diamond press which creates a perforated board with square, rather than round, holes. Mr. Dixon, left, declares that the square perforation gives better results. Lebanite's perforated board is known as "PerfoBoard."

The method of joining the panels is patented, as is the trade name Panel Aire.

trademark), is also packaging perforated board. This company reports an interesting use of Peg-Board, fabricated from Masonite, for which it is authorized fabricator in the Southwest, in modern furniture designed by Variants of Los Angeles. Pacific perforates and cuts to size and the edges are routed. A lacquer finish and design are added by Variants and the individual furniture pieces are trimmed with a natural finish magnolia.

Big Use in Doors

Using Peg-Board, Pacific Board has completed the fabrication of 30,000 hook racks during a four-month period.

W. L. Dixon is planning an extensive "engineered for use" fabrication program for this new hardboard, with emphasis on research that will clearly define those products for which hardboard is fabricated.

An extensive flush-door program has been set-up in Southern California by door companies which are using from 50% to 100% hardboard in construction. The manufacturers and fabricators of Masonite have gone so far in this field as to set up a door-testing program.

Pacific Board reports the increasing use of large sheets of tempered Presdwood in outdoor signs. Foster & Kleiser has made an extensive use of this hardboard in signs for the Bank of America along the Pacific Coast.

Use in Aircraft Industry

Fabricators of hardboard are noting the increased use of hardboard sheets by airplane builders. The application here is the construction of shipping cartons for plane parts, etc. from hardboard. Moving concerns, such as Lyon Van & Storage Co., are increasing the consumption of hardboard by its use in shipping containers.

Mission Furniture Mfg. Co. in Los Angeles has increased the use of hardboard by applying it as a back-up sheet to strengthen plastic surfaces used in furniture manufacture, such as Formica.

A Southern California vacuum cleaner manufacturer is using Masonite's Leatherwood for the tank section of the cleaners. Pacific Board supplies these, bent to shape, 300 a week at the peak of an order.

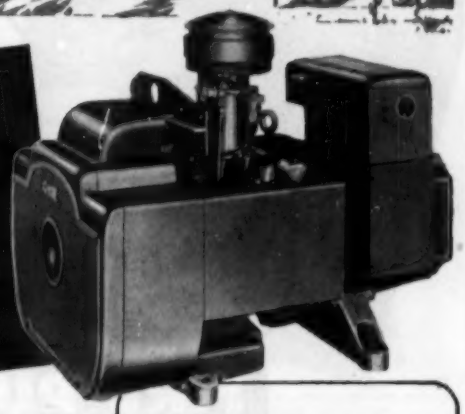
First Circular Unit Successful at Dee, Ore.

Oregon Lumber Co., Dee, Ore., producers of ALLwood hardboard, report successful use of a continuous

HARDBOARD

Forging Stronger Links in Microwave Relay

ONAN STANDBY ELECTRIC PLANTS



Microwave transmission is only as dependable as each of its relay links. If one repeater station cannot operate, messages do not get through.

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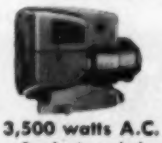

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circular humidifier for conditioning hardboard. The unit has been in operation for the past two years and is said to be the only one of its kind in the hardboard industry. Industrial Air Company, Hyde Park, Mass., are the manufacturers.

The unit consists of an enclosed turntable 45 ft. in diameter housed in an aluminum shell 48 ft. in diameter. Two large fans in the center force warm, humid air outward over the panels. Its holding capacity is 480 4x16 panels, with a shift capacity (8-hr.) of over 50 M sq. ft. The panels remain in the humidifier five hours at a stretch, which is ample time for the board to reach the desired moisture content.

John Syme of Oregon Lumber reports, "Upon leaving the humidifier the conditioned panel contains from five to seven percent moisture." Syme declares two of the major advantages of this circular unit are its low manpower requirements (only one man needed) and its comparative high production.

Oregon FP Lab Reveals Lodgepole 'OK' for Board

G. D. Nixon, formerly of the Oregon Forest Products Laboratory and now with the Monsanto Chemical Co., in 1953 concluded a study for the OFPL revealing the practicality of manufacturing hardboard from chips of lodgepole pine. This research project, along with the now-operating Oregon Fibre Products plant at Pilot Rock, Ore. and the new Weyerhaeuser hardboard plant at Klamath Falls, Ore., shows that prospects are quite bright for fuller utilization of wood not otherwise going into lumber in the pine region.

Europeans' Output Up 250% in Four Years

(thousand metric tons)

Country	1938	1946	1950
Finland	3	4	37
Norway	*	13	35
Sweden	47	144	220
Total Northern Europe	50	161	292
Eastern and Central Europe	—	5	25
Germany	4	5	81
Other European Countries	11	33	111
Total Europe	65	204	509
U. S., Canada combined		under	400

(The figures in this table are believed to include semi-hardboards, and consequently the discussion here should be regarded as referring to them also.)

Fibreboard hardboards, as the table shows, were largely a Swedish product before World War II. They were developed later than insulating boards, but by 1938 European production had reached 65,000 tons, of which nearly three-quarters came from Sweden. Since then the indus-

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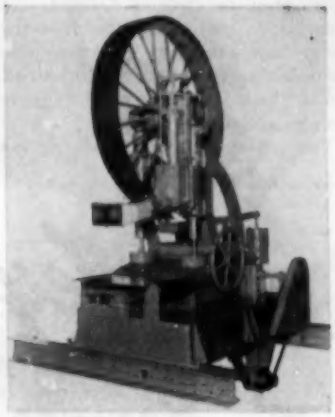

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try has continued to expand rapidly, both during and after World War II, and production was over 200,000 tons in 1946 and 509,000 tons in 1950.

The industry has also developed more rapidly than in the United States and Canada, where the earlier processes were more effectively protected by patents and where sawn timber has been in more plentiful supply, so that the combined output of the two countries in 1950 was less than 400,000 tons. As with insulating boards, production in Europe has become more widely spread geographically, and Sweden's share of the total had fallen to less than 45 per cent by 1950. The industry is now solidly established in Germany, Finland, France, Italy and Norway, each of which produced over 20,000 tons in 1950, and is becoming icreasingly important in several other European countries.

Chipboards (made from wood splinters, chips, sawdust and shavings and similar wood waste from plywood factories) have been produced in Europe on an industrial scale only since the end of World War II, when sawn timber has been in somewhat short supply. In 1950, production may have been around 55,000 tons, most of which came from Switzerland, Belgium, UK, Western Germany and France. Continuing scarcity of sawn timber expected over the next decade makes it likely that the demand for board of this type will continue to rise. Increased output will depend partly on availability of raw materials as well as the industrial capacity. (Reported by FAO.)

How Low-cost Boards Will Help Asiatics

The key to raising the standard of living through better housing for untold millions of Asiatic people may well lie in the production of low-cost chipboards. An experimental project being carried on by the government of Burma holds great promise in that a house has been made entirely of chipboard with no additional lumber needed for framing purposes. Effective combinations of panels have been made whereby an entire wall unit is cast in a single piece with enough strength to support a roof. Exterior protection against weathering is provided by a German-developed paint for warm, moist conditions.

The Burmese have proved that tropical woods are highly suitable for chipboard production and in many respects superior to European woods; a surprising result of tests is that the extent of shrinkage in the thickness of such boards, when made of a mixture of lighter and heavier woods, averaged only 7 per cent less, or less than half of the average contraction of boards made from European woods. (Reported by Unasylva-FAO-UN.)

New Plant Uses Wet Process in S. America

Early 1954 will see a new hardboard plant in South America begin turning out a commercial product. Duratex S/A in Sao Paulo, Brazil, is to manufacture a hardboard from Eucalyptus saligna. This wood has given excellent results in hardboard mills in South Africa. The plant will use a 20-opening press accepting sheets 4 x 18′ in size. A tempering unit is included in the production line. Under the "wet" process, both hard and softboards can be produced.

The mill has been planned to produce 12,000 tons of hardboard per year in thicknesses of ⅛″, 3/16″ and ¼″. The company is considering the possibility of a lacquered tile board among its products.

It is expected that the output of the Duratex plant can well be absorbed in Brazil due to the great industrial expansion being carried out there. Also due to expected low production costs and high quality, the board may be sent abroad for competition with other nations' boards.

HARDBOARD

Hardboard Manufacturers Urged to Develop New Finishes, to "Pre-seal" Panels at Factory

"Because hardboard has gained widespread use only in recent years, very little work has been done on the development of materials especially designed for its finishing." This statement by John Syme on the technical staff of Oregon Lumber Co., Dee, Ore., points up the fact that there is a world of opportunity for manufacturers and fabricators to advance the salability, use and general acceptance of hardboard.

For instance, Syme declares that paintability of hardboard is, to a certain extent, unsatisfactory for the reasons that (1) no special hardboard finishes, such have been standard for wood or plywood, have been available and (2) hardboard is porous even though it looks smooth. Syme states that his company has done research on painting and on the "sealing" of hardboard to increase paintability.

He further says, "The many uses of hardboard require that its painting properties be comparable to other materials of similar use. Therefore it is essential that the industry pay direct attention to the improvement of these properties, either through modification of the board itself or in development of more suitable painting methods and materials. The initial step should be the education of consumers in proper techniques for finishing, and research organizations, paint manufacturers and hardboard producers should cooperate in a program of testing and formulation of painting materials for use on hardboard. Finally, the present manufacturing field should be expanded to include a hardboard product which is "presealed" at the factory, thus insuring satisfactory painting properties.

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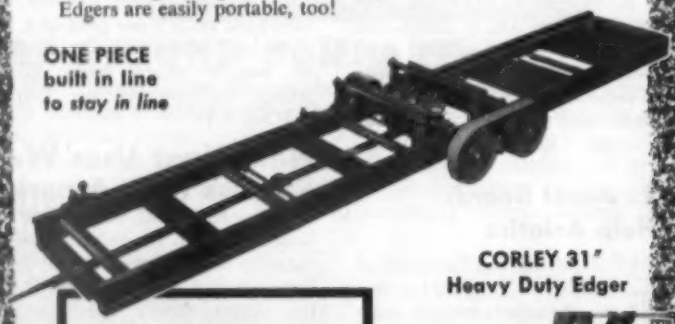

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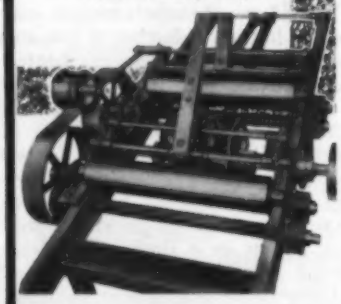

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Researchers Report on Moisture Relationships

"Very little information is available on the humidification of hardboard. Considerable work has been done concerning the effect of water absorption on the moisture content and dimensional stability of hardboard, primarily because this type of test has been included in the tentative American Society for Testing Materials Standard D 1037-52T, *Evaluating the Properties of Fiber Building Boards.*" So report J. R. Stillinger and R. A. Currier, who recently conducted a study on moisture relationships in hardboard.

"In actual use conditions, humidity exposure is probably more important than water submersion, as there are relatively few uses where hardboard is subjected to water soaking. On the other hand, the majority of hardboard is used under conditions where continual fluctuations in humidity are occurring.

"This study is part of a larger research program at the Oregon Forest Products Laboratory designed to evaluate the strength and related properties of commercial hardboard. This investigation should provide information which will be helpful to those organizations responsible for setting standard test procedures, to hardboard sales groups, to hardboard users, and to research institutions working with this comparatively new wood-base product."

Further details of their study are contained in a report issued by the Oregon Forest Products Laboratory entitled, "Relative Humidity, Moisture Content, and Dimensional Stability Relationships in Hardboard of Three Manufacturers."

Continuous Press in Britain Now Operating

In mid-summer of 1953, announcement was made of the availability in this country of the Bartrev press, a British-developed machine which produces hardboard in a continuous sheet.

The first press, which is on three-shift operation near London, is 131 feet long and weighs 200 tons. It uses approximately 50 tons of waste material daily, is expected to produce 30 million square feet of finished board per year.

Material from wood shavings or chips is pre-dried, weighed, and treated with measured amount of resins and distributed by a special feeder so that it forms an even layer in desired thickness on an endless 50-inch wide stainless steel belt.

The belt carries the material first through a radio frequency heater where resin polymerization begins, then it enters a heated pressure zone where the board forms and the polymerization is completed. Through the pressure zone the board is between two endless stainless steel bands and the pressure is exerted by six hydraulic units which press out air pockets and add the finish to the board. Emerging from the machine the strip is trimmed and cut into required lengths by a traveling cut-off saw.

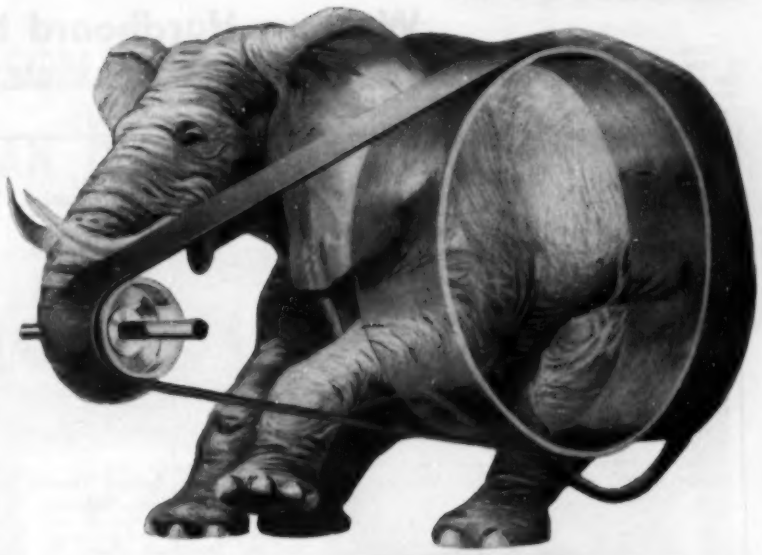
New Plant for the South

Another board factory underwent construction during 1953. It was the Mississippi Wood Products Co. at Jackson, Mississippi. This plant was built to make a core-type board, which has many applications when used in conjunction with other materials, such as veneer, or in furniture manufacture.

Plywood Prices

By H. J. COX

Starting the first of the year at $85 for ¼" AD SO1S (the basing price for other sizes and grades), the Douglas Fir Plywood market moved up to $90 in February and held that position until August when a slowdown in market demand was immediately followed by the granting of extra discounts. This practice prevailed until late October at which time discounts vanished overnight and prices suddenly stabilized at a $76 base. Within a week, $80 prices appeared on the market horizon and, by the end of the year, prices were back to $85.



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HARDBOARD

Western Hardboard Plants

(Note: 1st line is 1953 production; 2nd line is 1954 probable production and 3rd line is the production capacity Figures obtained direct from company or from best available source.)

Note: Includes other boards that are not strictly hardboards, but which are similar to hardboards in respect to raw materials, manufacturing process or type of finished product.

Firm Name	Plant Location	Production Capacity or equivalent	Key Personnel	Details on Process and Products
Anacortes Veneer, Inc.	Anacortes, Wash.	20,000,000 " 24,000,000 " 30,000,000 "	H. W. McClary, gen. mgr., Kjell Stordalen, supt.	"Armorbord" hardboard. Using semi-dry process developed by Plywood Research Foundation. Weatherproof tempered board has been developed.
Canadian Forest Products, Ltd., Pacific Veneer Div.	New Westminster, B.C.	39,000,000 " 39,000,000 " 50,000,000 "	D. M. Zim, supt.	"PV" brand hardboard. Using Chapman process.
Cascades Plywood, Inc.	Lebanon, Ore.	5,000,000 " 10,000,000 " 24,000,000 "	B. V. Hancock, exec. v.p.	"Lebanite" hardboard. Dry process.
Chapman Mfg. Co.	Corvallis, Ore.	24,000,000 " 24,000,000 " 30,000,000 "	Arthur Vander Sys, mgr.	"Oregonbord" hardboard. Chapman process ("wet batch"). Producing tempered board; "Rib-tex" striated board; and blond, corrugated "Corru-tex."
Coos Bay Lumber Co.—1953	Coos Bay, Ore.	30,000,000 " 60,000,000 " 60,000,000 "	J. W. Forrester, gen. mgr.; plant supt.—A. A. Wehrle	Hardboard. Dry process. New plant; will greatly increase production in '54 after start-up Fall '53.
Forest Fiber Products Co.	Forest Grove, Ore.	60,000,000 " 60,000,000 " 60,000,000 "	Harold A. Miller, pres.; O. W. Frost, mgr.; G. E. Tower, tech. dir.	"Forest" hardboard. Using wet process. Forest Tee-N-Gee panels. FORON exterior type. Various colored and specialty panels under development.
Long-Bell Lumber Co.	Longview, Wash.	Pilot plant production only	Arthur L. Mottet, research director	Hardboard. Dry process. Operation under development. Full-scale start up date has not been announced.
Masonite Corp.	Ukiah, Calif.	200,000,000 " 208,000,000 " 208,000,000 "	E. T. F. Wohlenberg, v. p. & gen. mgr.	"Masonite" hardboard using Masonite process.
Montana Hardboard	Missoula, Montana	— — 30,000,000 sq. ft. ⅛"	Gordon Lynch, mgr.	Hardboard. Expected to get going this year.
Oregon Fibre Products, Inc.—1954	Pilot Rock, Ore.	— 54,000,000 sq. ft. ⅛" 75,000,000 sq. ft. ⅛"	O. B. Eustis, General Manager	Hardboard and softboard, produced on the same press. Altogether over 70 different board products can be turned out. Sales through U.S. Gypsum. Ponderosa pine.
Oregon Lumber Co.	Dee, Oregon	50,000,000 " 60,000,000 " 60,000,000 "	J. D. Wirrick, mgr.; W. J. Runckel, supt. & tech. dir.	"Allwood" hardboard. Incl. Standard Hardtemp, Black Hard Temp, and Hardlite. Wet process. Doing a lot of development work in use of hardboard sealers. Sales via Simpson Logging Co.
Shasta Plywood, Inc. (Subs. U. S. Plywood Corp.)	Redding, Calif.	50,000,000 sq. ft. ⅜" 60,000,000 " 60,000,000 "	Gene C. Brewer, gen. mgr.	"Novoply." 3-ply construction. Outer skin is made of shavings, inner made of ground wood fibre. Novoply can be used as a core for other materials. Made by Swiss process, Fred Fahrni inventor. Finishes are redwood and light-finish fir or pine.
Washington Hardboard Products, Inc., 1954	South Bend, Wash.	— 8,000,000 " 12,000,000 "	Bryce Caldwell, pres.; Frank Smith, supt. & mgr.	Hardboard. Dry process. Expect plant to be in operation by mid-1954. Using German press.
Weyerhaeuser Timber Co.	Longview, Wash.	Pilot plant production only	Clark C. Heritage, director of research	Carried on the research here which led to development of new plant at Klamath Falls.
Weyerhaeuser Timber Co.	North Bend, Ore.	—	—	New particle board plant. First such type on the West coast. Construction to begin in 1954. Watch Lumberman for future details.
Weyerhaeuser Timber Co. 1954	Klamath Falls, Ore.	— 60,000,000 sq. ft. ⅛" 90,000,000 sq. ft. ⅛"	Jack Robinson, superintendent	Hardboard. First to use dry process using Asplund—defibrator fiber. Making a line of custom-tailored boards. Basic raw material is white fir.
Willamette Fibre & Chipboard, Inc.	Sweet Home, Ore.	— — 30,000,000 sq.ft.⅛"est	John Tyner, pres.	Hardboard plant not yet constructed. Chipping facilities are now being prepared.

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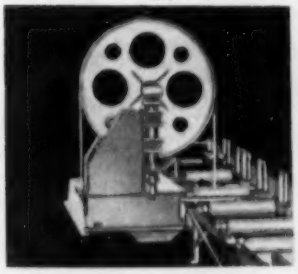
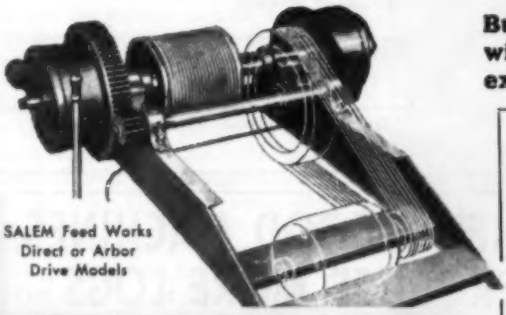


SALEM Line Bar and Resaw



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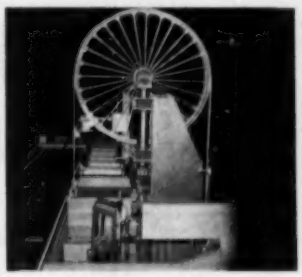
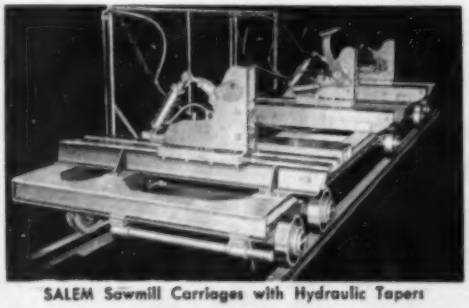


SALEM Band Mill



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HARDBOARD

Eastern [& Latin American] Hardboard Plants

(Note: 1st line is 1953 production; 2nd line is 1954 probable production and 3rd line is the production capacity. Figures obtained direct from company or from best available source.)

Note: Includes other boards that are not strictly hardboards, but which are similar to hardboards in respect to raw materials, manufacturing process or type of finished product.

Firm Name	Plant Location	Production Capacity or Equivalent	Key Personnel	Details on Process and Products
Abitibi Power & Paper Co.	Sturgeon Falls, Ontario	46,000,000 sq. ft. 1/8" 55,000,000 " 48,000,000 "	A. P. Jewett, vice-pres., sales	Hardboard.
Duratex S/A—1954	Sao Paulo, Brazil	Annual capacity estimated at 33,000,000 sq. ft. 1/8"	Eudoro Vallela, Nivaldo, C. deU. Cintra, mng. directors	DURATEX hardboard. Using Eucalyptus. First board plant in Brazil. Practically 100% European equipment.
Fibracel S/A	San Luis, Potosi, Mexico	37,440,000 sq. ft. 1/8" 37,440,000 " 37,440,000 "	Ing. Raul Madrazo, mgr.; Ing. Jose Duarte, supt.	"FIBRACEL" & "DURO" hardboard, and oil-tempered board — FIBRACEL, EXTRA DURO. Using wet-type system in plant designed by American Defibrator and A. B. Defibrator of Sweden.
Masonite Co. of Canada (Subs. of Canadian International Paper Co.) SunLife Bldg., Montreal, Que.		115,000,000 sq. ft. 1/8" 115,000,000 " 115,000,000 "		Masonite line of products: Presdwood, Tempered Presdwood, Black-temp, Presdwood, Temprtile, Quarterboard, Leatherwood, Flooring. Masonite process.
Mississippi Wood Products, 1953	Jackson, Mississippi	—		Producing a chip-type board.
Masonite Corp.	Laurel, Miss.	682,800,000 sq. ft. 1/8" 682,800,000 " 682,800,000 "	C. H. Westphalen, v. p. & gen. mgr.	"Masonite" hardboard using Masonite process. Largest hardboard plant in the world.
Nu-Ply	Bemidji, Minn.	—	—	Work planned for this year to build plant using wood leftover as raw material for a board developed by Elmendorf Research of Chicago.
Rock Island Millwork Co.	Rock Island, Ill.	Not available	W. K. Swift, mgr.	"Resinwood" hardboard. Raw material: sawdust, shavings, mill waste.
Souhegan Mills	New Hampshire, USA	—		
Southern Plaswood	Hope, Ark.	—		"Plaswood" process board. Ranging from 1/8" thick hardboard to 1" panels for corestock. Also, "Type A" of high moisture resistance for exterior use. Many specialty panels under development.
Superior Wood Products Co.	Duluth, Minn.	48,000,000 sq. ft. 1/8" 60,000,000 " 60,000,000 "	M. J. Opsahl, gen. mgr.	"Superwood" hardboard. Using a modified Chapman process.
Trafalgar Mills, Ltd.	South Nelson, New Brunswick	21,648,000 " 21,648,000 " 21,648,000 "		"Plaswood" process board.
U. S. Gypsum Co.	Greenville, Miss.	78,000,000 " 78,000,000 " 78,000,000 "		"Duron" hardboard. USG dry process.

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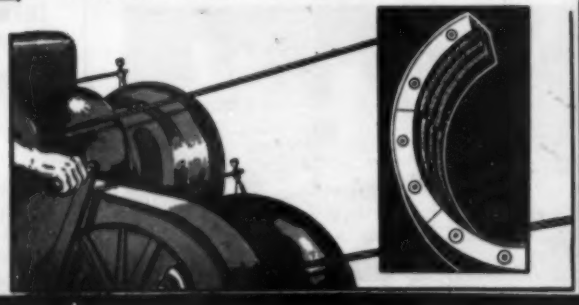


Loggers Make Headway in '53

in the never-ending search for faster, cheaper and better methods and machines to get out logs

A Review of Major Developments in the Logging Fields

The logging industry everywhere in America made great strides in 1953 in providing itself with the best available and most modern means and facilities for harvesting the timber crop. Loggers always have been quick to discard old methods and equipment for better, more efficient machinery and practices.

Clyde A. Corman, logging manager, Longview, Wash., Branch, Weyerhaeuser Timber Co., in his annual address at the 1953 Pacific Logging Congress, said on this point:

"Each of us here—each company represented here—is a part of a highly competitive industry. We are all interested in securing more efficient logging tools that may help to put us in a better competitive position in our industry. As customers of machinery manufacturers, we are willing to buy new machinery that will help us improve our own profit picture. Because of the profit motive, there is no lack of demand among us loggers for new and better logging equipment."

Sweeping Changes Witnessed

And because loggers are quick to see the advantages of new methods and machinery, a single generation has witnessed almost a complete transformation in much major operations as transportation and handling of logs. Gone are nearly all of the seven thousand or more miles of logging railroads which existed in 1930, and in their place are some 40,000 trucks and trailers. Last year saw just about the last of the logging railroads disappear in British Columbia.

The hey-day of the railroads in hauling logs to water or mill lasted several decades and provided the lumber industry with its most colorful era, but the job of transporting logs to market can now be done better by truck. In fact, truck logging and its roads are the only possible foundation for general good forest management in the modern era of high utilization.

No division of logging has been static. In this summary of developments during the past year no attempt will be made to cover everything. But attention will be focused on some of the major steps which spell progress. Many of these mechanical developments were displayed at the logging machinery show held in connection with the 44th Pacific Logging Congress in Seattle in December. This, the greatest of all such shows, enabled visitors to see the newest and best in logging devices developed by American manufacturers.

Cost Saving in Loading

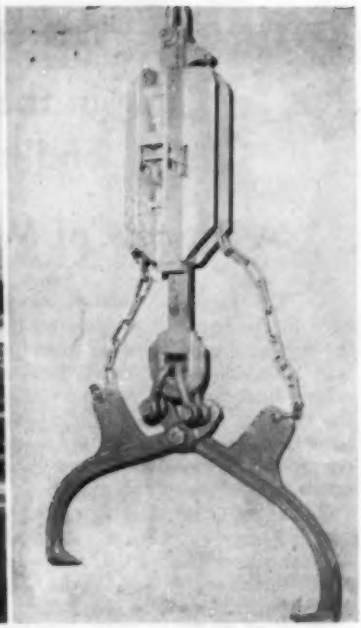
Loggers all over America last year produced tangible evidence of their great interest in log loading and unloading methods and machinery, including various types of mobile and bridge cranes. They know that cost savings can be made through the adoption of more modern loading methods. Highlight of this development was the installation during the year of at least three bridge type cranes in the Douglas fir field. Normally in these installations logs are handled in truck load units, although they can be handled one at a time if necessary.

The past year saw considerable development in loading booms as more types became available.

The growing trend toward use of private roads for log hauling where possible and the use of extra-heavy equipment on such hauls continued. This system calls for establishment of fast reloading facilities and several were put into use during the past year. A notable installation of this type was that made by the MacGregor Logging Co., at Idaho City, Idaho. A feature of this new set-up is that it not only has fast facilities for unloading the woods units which carry about 6,000 feet, but also storage facilities have been provided for holding about 300,000 feet of logs. This means that a sufficient inven-

MOBILE LOGGING IN THE SOUTH—Mobile loader at left swings a man-sized loblolly log into position to top off truck load of logs that is ready to move out of the woods toward the Lightsey Bros. Lumber Co. sawmill at Miley, S. C. Southern loggers have made much progress in mechanization of woods operations. Since most of the fixed costs of logging have gone up in recent years, operators have had to increase their mechanical efficiency and keep down the cost per M.

INGENUITY IN ENGINEERING has contributed a lot to efficient log loading, such as this arrangement on the Booth-Kelly Mosby creek tract in Oregon. Here the stationary mounted loader picks logs from pond with air tongs and loads them onto empty cars. The empties pass closely but freely beneath the loader.



PICTURED ABOVE ARE THE Second Loader tongs, which were displayed at the Pacific Logging Congress in Seattle, Wash., in November of 1953. These tongs are automatic.

tory of logs is always available for the highway haul to the mill. The advantages of this system are well summed up by Gordon MacGregor in these words: "The 6,000 board foot loads weigh about 48,000 lbs. Transferring a load from the 40,000 lb. woods truck-trailer to 23,000 lb. highway unit reduces loaded vehicular weight by 17,000 lbs., bringing it down from 88,000 to 71,000 lbs."

Trends in Logging Equipment

Use of steel spar trees was a definite trend in 1953. A number of new

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ADAPTED TO SALVAGE are small, portable spar trees, a definite trend in the logging field. These truck-mounted spars are made by several machinery manufacturers and come in various sizes and designs.

BACK RIPPERS mounted on the back of an angle dozer blade were displayed at the Pacific Logging Congress, and along with the RUBBER-TIRED TRACTORS represent some of the latest advances in the machinery field.

designs made their appearance in western logging operations. Those which are truck-mounted steel spars were found particularly useful and efficient in logging small timber and in salvage operations. No less than five firms have designed and are now supplying steel spars.

Increasing use was made during the year of rubber-tired tractors. Several of these units were displayed at the Pacific Logging Congress in Seattle and at regional logging conferences. Loggers have shown definite interest in this new type of tractor. In this connection it is interesting to note that the rubber-tired arches are increasing in popularity.

More Torque Converters

A distinct trend in 1953 was increasing use of torque converters on trucks, tractors, loaders and yarders. Speakers at the Pacific Logging Congress pointed out that such equipment results in large savings in engine wear and in tires.

Another trend was toward use of wider frames on off-highway logging trucks and lighter truck frames particularly for the hauls over good public highways.

There was increased interest in weighing devices on trucks so that maximum legal loads might be hauled over public highways and haulers be made immune from high overloading fines.

Increased use was made during the year of so-called dozer rooters, back-rippers and clearing blades. A number of devices of this character became available and users reported their use greatly increases the efficiency of dirt moving equipment. They were also featured at the PLC in Seattle.

There was growing interest in

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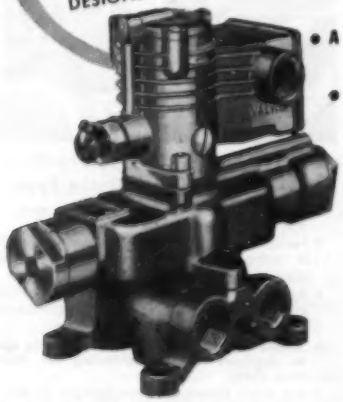

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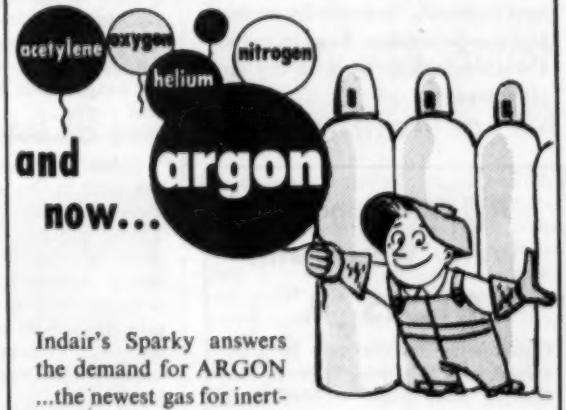

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FAST RE-LOADING SET-UP at the MacGregor Logging Co., Idaho City, Idaho, operation. Storage facilities here provide for 300 M' of logs, thus allowing plenty of logs at all times for the highway haul to the mill.

strapping entire truck loads of logs before dumping into water. One notable exponent of this new technique is the Albion Creek Logging Co., which trucks logs to Port Angeles, Wash. Prior to reaching Port Angeles, the truck loads are strapped with two 2" steel bands. The company says the big advantage comes in getting much greater footage into the rafts when logs are bundled than when they are rafted flat, the cost of towing being the same for both types of rafts.

Air tongs, while not new in 1953, increased in popularity and use. They are now available in capacities to fit nearly all loaders. In this respect, it is interesting to note that during the year one prominent southern lumber company decided to install a loader equipped with one of the western air tongs. This likely is a "first" for that region.

More Concrete Bridges

Some progress was made during the year in the use of chemicals as a means of killing brush along roads. There was also increased interest in pruning and brush cutting equipment. A new hydraulic wedge was a minor item introduced in 1953. A salt-spreading attachment for winter road maintenance in the snow country has been gaining new adherents.

Something new in logging highway bridges was the installation of a number of prestressed and precast concrete spans. A bridge of this type has been installed by Anderson & Middleton Lumber Co. of Aberdeen, on a road tapping U. S. Forest Service timber north of Grays Harbor. This bridge was 124 feet long. Others were placed in use in the Forks burn area, in the Cascades and in Idaho.

During the year another skyline system was put into service by a British Columbia company to transport logs across the Fraser river. This skyline illustrates the logger's uncanny ability to employ spectacular and unconventional, yet practical, means to move logs to market economically.

Losses to Pests

The most serious problem confronting the Western Pine forest future is losses from pests. Inroads made by insects and disease are imperiling the forest economy of many communities. Raids by tree-killing insects have cost the region an estimated total of 73,000,000,000 board feet of timber in the past 20 years. Diseases have taken heavy toll also.

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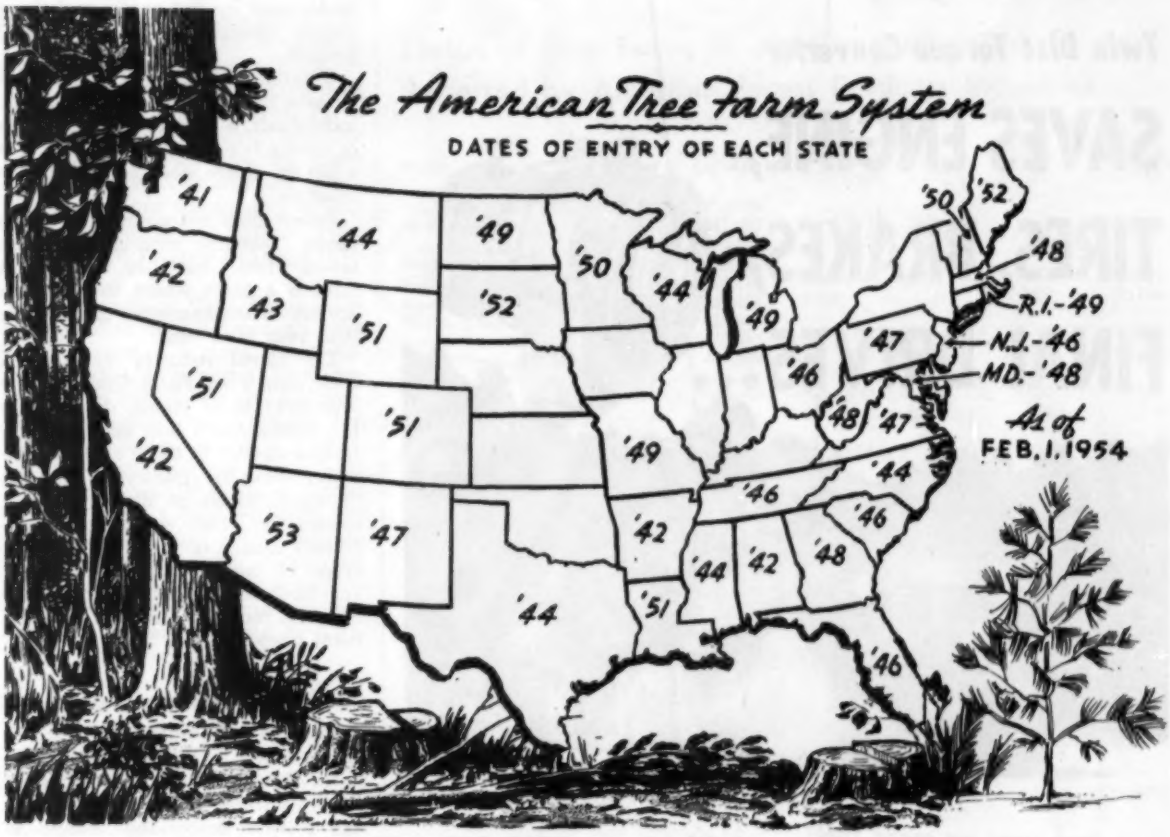


30 Million Acres in Tree Farms

Additions in 1953 totalled nearly 2½ million acres; AFPI head hopes for 5 million in '54

By
Leonard G. Carpenter
President, American Forest Products Industries, Inc., Washington, D. C. and President of McCloud Lumber Co., McCloud, Calif.

Today, more than ever before, good will is a business asset. Those of us who operate sawmills and sell lumber are particularly vulnerable to public opinion because we deal with a natural resource—timber. A great many of our fellow citizens still worry about timber shortages.

As lumbermen we know the gap between timber drain and timber growth in the United States is closing steadily. We have facts and figures to prove it, but, do the people in the communities where our mills and lumber yards operate know this?

Do they know that last year 715,548 acres of land were planted to forest trees, and more than 30 percent of this planting was done by forest industries? Do your employees, customers and community neighbors know that the forest industries of the United States employ more than 5,000 technical foresters? Do they know that lumber companies and pulp and paper minufacturers spend more millions of dollars a year protecting their own and neighboring woodlands from fire or that forest industries started and still sponsor the nation-wide Keep Green fire prevention campaign?

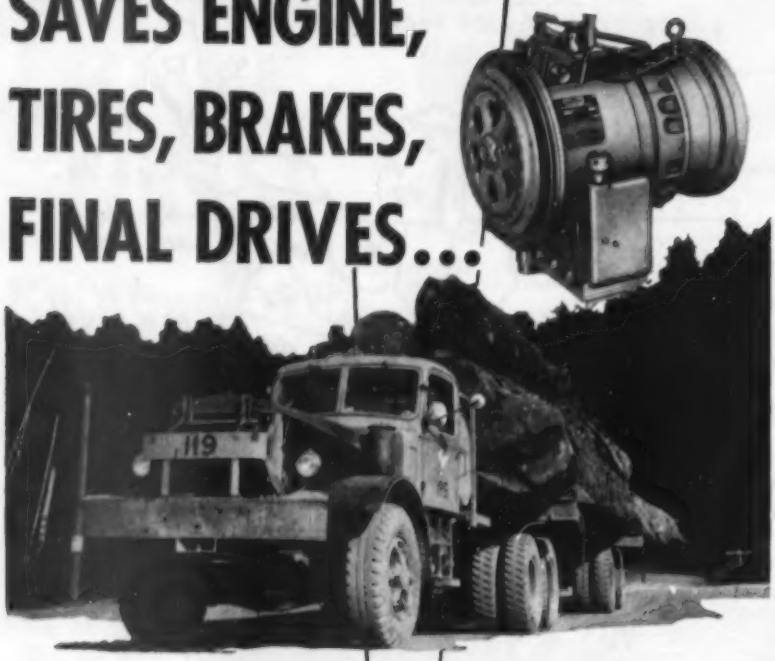
"Farm" Idea Is Understood

Running a successful lumber business involves far more than managing efficient camps, sawmills and lumber yards. It also means dealing with people — customers, employees and the people in the towns and cities where your company operates. It means building faith and understanding based on sincerity and performance. Motives, objectives and above all accomplishments in forest management must at all times be

TREE FARMS

Twin Disc Torque Converter

SAVES ENGINE, TIRES, BRAKES, FINAL DRIVES...



...and uses no more fuel!

REPORT ON No. 119

Three years ago, Hammond Lumber Company of Eureka, Calif. installed their first Twin Disc Model DF Torque Converter on logging truck No. 119 . . . a Mack being repowered with a 300 hp Cummins. Hauling up to 110 tons GVW from loader to reload on 42-mile round trips—the job was enough to thoroughly prove the advantages of Twin Disc Torque Converter performance.

HERE ARE THE RESULTS

Round Trip Time Cut: On downgrades, Model DF's Hydrodynamic Braking feature virtually eliminates pedal-pumping. Where the load levels off, Lock-out Drive permits direct mechanical drive . . . higher speeds . . . maximum fuel economy.

On starts and steep climbs, Twin Disc Converter Drive—multiplying torque up-to-6:1—reduces shifting, eliminates engine lugging and torsional variations, cushions shocks.

Maintenance Costs Cut: Hammond management reports: "The Model DF Converter greatly reduced wear and replacement on the engine, final drive, brakes, transmission and tires, compared with performance of standard transmission-equipped trucks."

Ask for Bulletin No. 501.

Above: No. 119—forerunner of Hammond's Twin Disc Converter-equipped fleet.

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understood by the public and thoroughly identified with the national welfare.

Creating this kind of community climate is not a job for just a few individuals, a few lumber companes or even a few trade associations. It is a job the entire wood using industry must do.

People may not understand much about "selective cutting" or "sustained yield," but they all know a farm is a place where useful crops are grown and harvested on the same land year after year.

The forest industry sponsored American Tree Farm System, now underway in 36 states, therefore is the lumberman's best and most effective answer to those citizens who worry about the country running out of wood. Much of the timberland owned by forest industries in the United States is growing repeated crops of trees under management standards that equal or excel those on even the best-managed government properties.

Tree Farms Now of Age

Some of these industry forestlands are certified in the American Tree Farm System the lumber industry started thirteen years ago to encourage private timberland owners in better management practices. Our industry Tree Farm program now has come of age. Today, there are more than 30,000,000 acres of tax-paying, crop-producing woodlands listed on the Tree Farm records American Forest Products Industries maintains at its national headquarters in Washington, D. C. This means an area as large as the entire state of Pennsylvania growing trees for use under the best kind of forest management.

This is fine. We've made lots of progress since 1941, but we still have a long way to go. Actually, only a small percentage of the well-managed, privately owned forestland in the country that is now eligible for Tree Farm certification has been enrolled in the program. The forest industries, working through state committees or the Tree Farm sponsors in their respective areas, are taking steps to get the Tree Farm program in high gear everywhere.

Industrial foresters are being made available by individual companies to inspect and certify farm woodlots and other privately-owned timberlands as Tree Farms. Farm Woodlot conferences to examine and analyze forestry problems on the state level are being planned by industry committees.

In the South a number of individ-

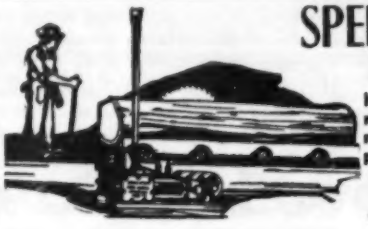
ual lumber companies are giving tree farming a big boost by integrating small non-industrial woodlands in their operating areas with their own properties in a single Tree Farm Family unit. The lumber company concerned provides forestry know how for the small landowners in return for the first opportunity to buy at prevailing market prices those timber crops individual Tree Farms produce.

The 30 million Tree Farm acres now enrolled in the American Tree Farm System is a good beginning. But, it is only a beginning. There are more than 342 million acres of tax-paying, privately-owned woodland in the United States capable of producing trees for harvest. This year American Forest Products Industries plans to add, at the very least, five million acres of this land to its national Tree Farm rolls. Next year, with industrial forest land owners setting the pace and the example, another ten million acres can be certified in Tree Farms.

The American Tree Farm System and the wise program of timber management and use it stands for is our industries' guarantee to the people of the United States that this country will not run out of wood.

Status of Tree Farms as of February 1, 1954
Reported by American Forest Products Industries

State	No. of Tree Farms	Acreage
Alabama	449	2,757,769
Arkansas	274	3,047,592
Florida	96	2,393,173
Georgia	102	1,065,186
Louisiana	112	1,578,774
Mississippi	399	1,107,403
North Carolina	88	654,912
South Carolina	123	1,145,599
Tennessee	314	420,648
Texas	532	3,352,345
Virginia	120	448,006
TOTAL SOUTH	2,609	17,971,407
Arizona	2	325
California—Redwood	20	143,176
California—Western Pine	138	1,489,712
Colorado	4	77,580
Idaho	138	720,396
Montana	48	958,955
Nevada	1	12,984
New Mexico	2	80,900
Oregon—Eastern	44	1,336,731
Oregon—Western	74	1,665,228
South Dakota—Western Pine	1	17,260
Washington—Eastern	80	592,784
Washington—Western	129	2,601,405
Wyoming	1	40,557
TOTAL WEST	682	9,737,993
Michigan	331	676,758
Minnesota	315	355,469
Wisconsin	12	723,643
TOTAL LAKE STATES	658	1,755,870
Missouri	41	101,086
Ohio	303	81,706
TOTAL CENTRAL STATES	344	182,792
North Dakota	98	38,290
South Dakota	60	1,670
TOTAL PLAINS	158	39,960
Maine	39	116,941
Maryland	9	2,882
Massachusetts	42	33,403
New Hampshire	118	96,007
New Jersey	17	9,971
Pennsylvania	174	142,955
Rhode Island	29	5,179
West Virginia	57	167,946
TOTAL EASTERN STATES	485	575,284
TOTAL FOR 36 STATES	4,936	30,263,397
TOTAL ONE YEAR AGO	4,241	27,838,077



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TREE FARMS

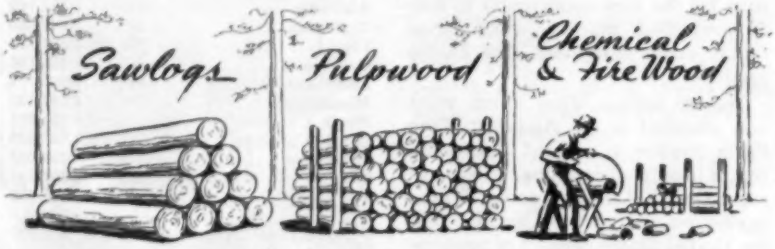
"NEW MECHANICAL BARKER FOR SMALL SAWMILLS

The future is beginning to look brighter for small sawmills. For some time they have seen the advantages due to barking logs and making chips, but the high cost of the equipment has prevented them from entering this field. Experiments have been made with a new type of mechanical barker which will be of interest to these mills.

This barker is being developed by the Hansel Engineering Company, 1500 Westlake Avenue North, Seattle. The preliminary tests have proven successful and the barker is being installed in a Western sawmill for production tests. The Hansel waste wood chipper can be offered with the barker as a packaged unit, so that with the long experience of the Hansel Engineering Company on barking and chipping installations, the installations would be sound and practical, with good additional profits for the small sawmills. (Adv.).

SUCCESS IN SOUTH DEPICTED BY THE CROSSETT "POOR" FORTY

Over a period of 15 years of intensive management, 34 acres known as the "poor" farm forestry forty, produced:



57,474 bd. ft.* worth $2081.22†

152.88 std. cords worth $1260.27†

158.42 std. cords worth $1088.75†

TOTAL VALUE † $4.439.01

When an inventory was made at the end of the 15-year period, the following volumes and values remained:

★ 130 pine trees per A. (4" dbh or more)

★ pine growing stock increased 534 cu. ft. per A.

★ 54% more pine volume in 1951 than in 1937.

★ pine stocking was approx. 1500 cu. ft. per A.

* Doyle Scale
† Mill Value.

(NOTE: Facts and figures contained in this piece on the productive possibilities of small ownership timber land in the south have been abstracted from a recent report entitled "15 Years of Management on the Crossett Farm Forestry Forties" which was written by R. R. Reynolds of the Southern Forest Experiment Station. Now retired from the Forest Service, Mr. Reynolds has developed a reputation for this type of research and much of the material he has compiled was previously unavailable. The following condensation is quoted and paraphrased from Mr. Reynolds' paper—Editor.)

"What should be done with run-down woodlands? How long would it take to build them up to where good returns could be obtained? Once they had been improved, how much income would they yield?

"To answer such questions, two 'farm forestry forties' were established in 1937. One of these, containing 34 acres, was the most lightly stocked tract on the entire Crossett Experimental Forest. On this, the 'poor forty,' it was hoped that the annual cuts of forest products would pay current costs of holding the land while the stands were being restocked to good trees.

"The second tract was well stocked. It was intended as an example of the returns possible after the run-down stands were built up. It contains 40 acres and is known as the 'good forty.'"

"What can the average owner of a small tract of woodland expect from intensive management?" The results of 15 years seem to indicate that most owners do not have the stocking and large trees of the good forty, and consequently few can expect, for some years to come, the returns similar to those from this area. The good forty is basically indicative of the eventual goal of management. "The poor forty, however, does show the more typical understocked and unmanaged farm woodland can be made to produce."

That tract was built up from a run-down to a highly productive forest in 15 years.

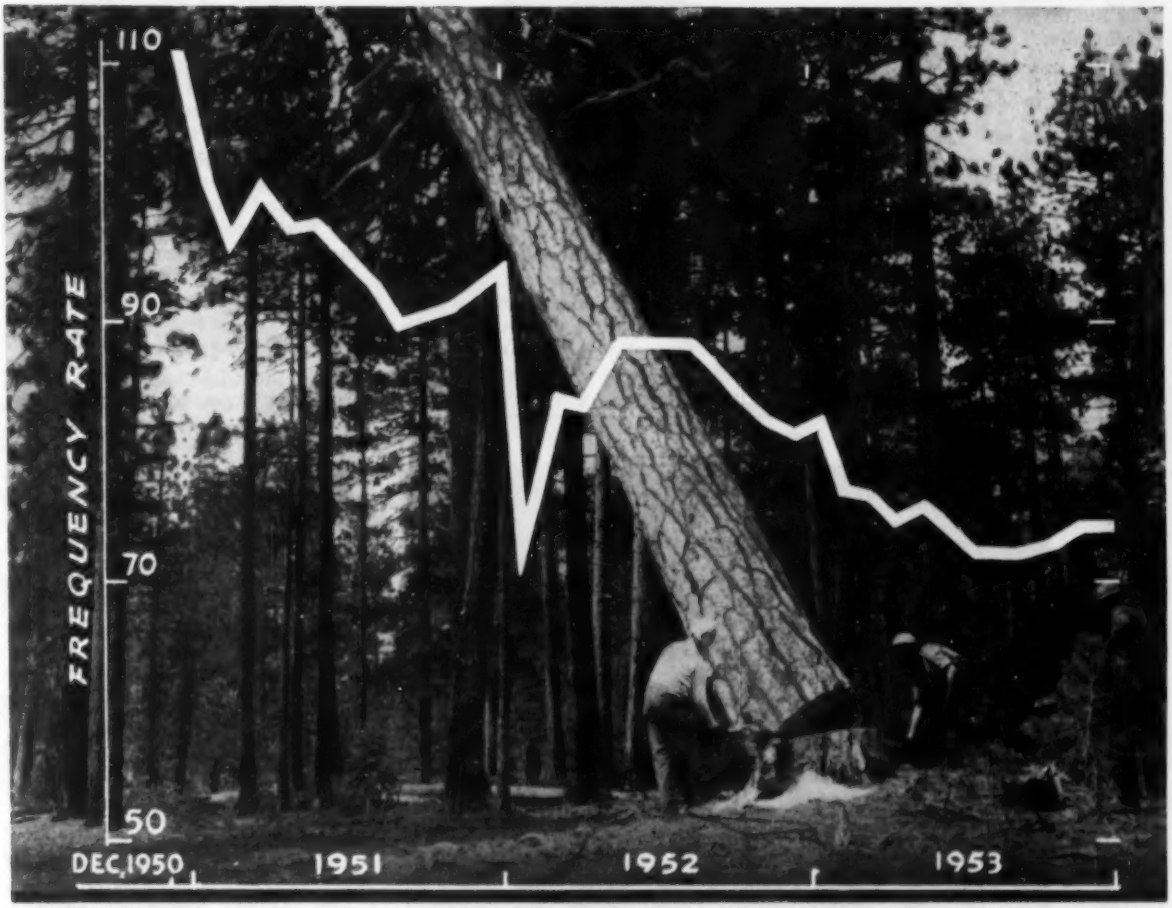
"In 1951 the average stumpage return per acre was over $10."

"The owner of the average small woodland does not need a wide knowledge of forestry to obtain returns nearly as good as those from the Crossett forties—provided his stocking is similar. A rudimentary knowledge of how trees grow and occasional help from a forester is all that is required.

"I've certainly gotten very good service from Wood Tractor Co."
E. W. Homstad

Homstad Logging Co.
Blaine, Ore.

You, too, can get good service on both service and parts if you call Portland, VErmont 3135.



SHOWING SAFE LOGGING on the Long-Bell Lumber Company operation, Weed, California, division. This shot is at Camp Number One east of Mount Shasta. Fallers are using electric power saws and wearing hard hats to guard against falling "widow-makers." Line graph shows how the Pacific Northwest Loggers Association has brought down the industry cumulative accident frequency rate from a high of 110 in December 1950 to the low 70's in late 1953. Rate formula is explained below. (Photo by Rarig Motion Picture Co.)

Accident Prevention Gets Boost

in 1953 as all branches of forest industries are uniting to keep workers on the job

1953 was a banner year in safety in the forest industries. Not only were real gains recorded in the accident prevention activities in all the various segments of forestry and forest products, but there was evidenced an awakening among management people that coordinated effort in accident prevention is worthwhile and really pays off.

Logging is still the most hazardous phase in the manufacture of forest products. However, many logging companies have safer woods operations than you'd find in some plywood plants and sawmills. Members of the Pacific Northwest Loggers Association who report their accidents to that group have shown general decrease in logging accidents for the last four straight years.

1953 also saw the Forest Products Safety Conference, an international organization, begin its twentieth year of trying to reduce accidents in the woods and mills. This conference will meet in Seattle May 20-21 this year, and forest industries men all over the country are invited to participate. So far as is known, there is no other safety group in the forest industries which takes in such a large area and which has done as much towards the elimination of the cost and pain of woods and mill accidents.

More Safety Engineers

Safety consciousness is spreading these days. Nearly every large company has at least one full-time safety engineer, and a great many of the medium-size operators combine the duties of a safety supervisor with those of some other job in the organization. The biggest job to be done in the safety field in logging and sawmilling is among the smaller operators—contract and independent operators who have no regular "overhead" personnel to whom safety duties can be assigned.

The solution to safety problems in the woods is being constantly searched for by the Pacific Northwest Loggers Association, the B. C. Loggers' Association and by the Forest Products Safety Conference. One of the latest steps forward in the industry has been the formation of a general coordinating group, representing all the major loggers, saw-

mill and plywood men in Oregon and Washington.

Big Drop in Accidents

The first - named group above, PNLA, in 1950 decided to see what organized safety procedure could do. The association, under direction of Manager E. T. Clark and Assistant Kenneth Murdock, began working on the industry level offering help to logging operators. Reports on members' safety records were first compiled in that year; successive yearly data show some amazing across-the-board gains by PNLA members. Safety films, made after World War II, contributed to this drop in human agony and lost production time. John Wahl, chief logger for Weyerhauser Timber Co., is chairman of the association safety committee.

In the fall of 1951, PNLA began holding local safety meetings in various centers throughout its area of influence. Management joined in. Yearly competition has been set up. Rather than give trophies for the Safest Operation of the Year, PNLA elected to have each member firm compete, first: *against its own record for the previous year;* secondly: *against the industry average.*

PNLA believes that it's the only known attempt in the logging industry in the U. S. to keep up accurate records and observations of the logging industry on safety. The British Columbia Loggers are believed to be the first association in Canada and they were well ahead of PNLA. James Roughton is safety director for the B. C. Loggers.

Planned Programs Pay Off

Are organized safety programs effective? Pacific Northwest Loggers Association reports notable success in the four short years since they began keeping accurate records among their members. Here is tangible evidence of the progress this group has made:

Year	Man Hours Exposure	Reportable Injuries	Frequency Rate
1953 11 mos.	14,000,048	1045	74.64
1952	16,123,511	1338	82.98
1951	16,537,606	1554	93.97
1950	14,409,871	1600	111.03

Note: Injury frequency rate formula: No. of Injuries x 1,000,000 Total Man Hours.

Award winners at the 1953 Forest Products Safety Conference for the various classes were:

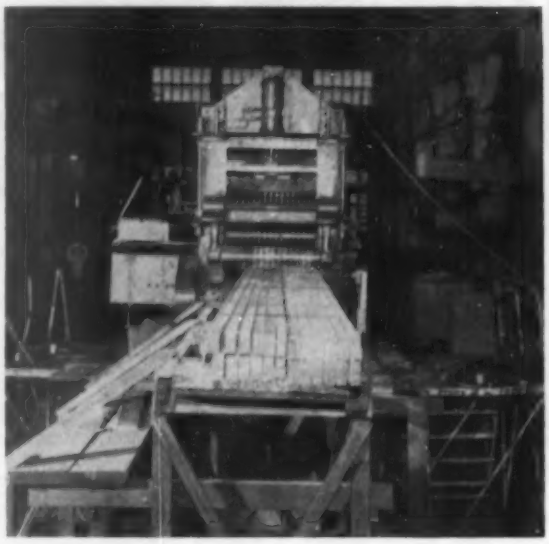
Fir logging (over 250,000 man hours)	
1-yr. Weyerhaeuser, Springfield, Ore.	29.32
5-yr. Weyerhaeuser, Enumclaw, Wash.	55.48
Fir logging (less than 250,000 man hours)	
1-yr. Weyerhaeuser, Raymond, Wash.	96.28
5-yr. Long-Bell, Vaughn Div., Eugene, Ore.	72.61
Pine logging (over 250,000 man hours)	
1-yr. Saginaw & Manistee Lbr. Co., Flagstaff, Arizona	31.25
5-yr. Edw. Hines Lbr. Co., Hines, Ore.	46.85
Pine logging (under 250,000 man hours)	
1-yr. American For. Prod., Lakeview, Ore.	49.51
5-yr. American For. Prod., Lakeview, Ore.	61.31
Sawmill operations (over 750,000 man hours)	
1-yr. Edw. Hines Lbr. Co., Hines, Ore.	5.35
5-yr. Edw. Hines Lbr. Co., Hines, Ore.	15.64
Sawmill operations (over 250M, less than 750M man hours)	
1-yr. B. C. Forest Products, Vancouver Sawmill, Vancouver, B. C.	16.26
5-yr. Oregon Lumber Co., Baker Ore.	27.09
Plywood	
1-yr. Weyerhaeuser, Longview Branch	5.40
5-yr. Weyerhaeuser, Longview Branch	21.64

The Achievement Award for the best improvement over the previous year went to Edward Hines Lumber Co., Westfir, Ore., division, which had the highest percentage drop in the accident frequency rate—83.80%.

NOTE: Injury frequency rate formula: $\frac{\text{No. of Injuries x 1,000,000}}{\text{Total Man Hours}}$

Southern Furniture

The furniture industry in the south is using two billion more board feet of hardwood annually than southern forests are producing. This statement was made by James T. Broyhill, a furniture manufacturer, to the Southern Furniture Manufacturing Assoc.



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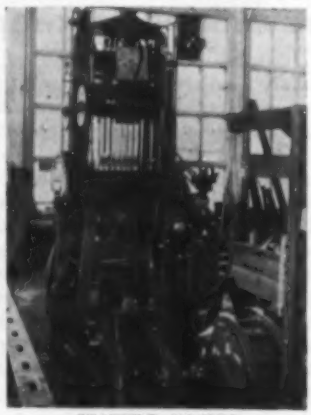

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Everett, Washington

Laing-Garrett Construction, Specialties, Inc.
Phoenix, Arizona

Miller-Gardner Fabrication Company
Monroe, Oregon

Rilco Laminated Products, Inc.
St. Paul, Minnesota

Roof Structures, Inc.
Webster Groves, Missouri

Standard Structures, Inc.
San Rafael, California

Summerbell Roof Structures
Los Angeles, California

Timber Fabrications
Miami, Florida

Timber Structures, Inc.
Portland, Oregon

Timber Structures, Inc. of Calif.
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Unit Structures, Inc.
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Monsanto Chemical Company
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Morris Lumber Company
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New Orleans, Louisiana

Sun Lumber Company
Van Nuys, California

Timber Engineering Co., Inc.
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United Brotherhood of Carpenters
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PULPWOOD
Another Record Reached in 1953

in the consumption of pulpwood in the U. S.; continued high level foreseen for 1954

By
W. S. BROMLEY
Executive Secretary, American Pulpwood Association

Pulpwood, the basic raw material of the Pulp and Paper Industry, today ranks second only to lumber in our annual consumption of forest products. Production-wise, 1953 was a record year in which more than the 1952 consumption of 26,435,000 cords of pulpwood was used. At the moment, most industry members predict a continued high level production and consumption of pulpwood for 1954, even though some mills have reduced their consumption of wood in the past few months.

Increased Interest in Forest Management

The Woodlot Conference of the American Forest Products Industries, Inc.; the Fourth American Forestry Congress of the American Forestry Association, and the Resources for the Future Conference in 1953 revived the interest of the pulpwood industry and other forest products industries in forest policies and plans for our forest resources. During 1953, an analysis of "Pulpwood Cut from Public Forests", as prepared by the American Pulpwood Association, aroused new interest in the management of forest resources on government owned lands. This analysis showed that government forest management policies and plans frequently have inadequate or no provision for the harvesting of pulpwood.

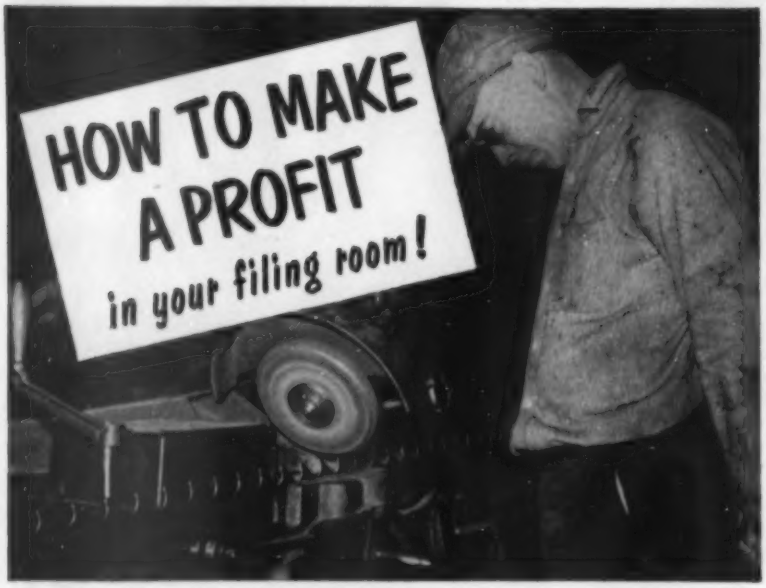
In the South

A big step in mechanizing pulpwood in the South during the past year was made in the rapid expansion of rail concentration yards. All signs point toward this continuing into 1954. There is a growing acceptance of simple yet practical material handling tools designed to reduce truck loading costs in the woods. During the past year, increased interest and study was given to the scaling of pulpwood by weight vs. volumetric measurement. In 1954, we may see more active steps toward greater use of scaling by weight throughout the South.

Northeast and Lake States

The pulpwood industry in this area has devoted much of 1953 to solving problems of pulpwood debarking in the woods. Chemical debarking, for a number of companies, seems to have reached a point of acceptance and practical application. Several new mechanical pulpwood debarkers were introduced and are now being observed and studied with optimism. For 1954, continued interest will be seen in the further development of a practical yet reasonably priced four-wheel drive skidding tractor.

(Continued on Next Page)



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	Resinoid Wheels	HA36-Q-B
Chipper & Planer Knives	Segments	DA30-G9-V20
Veneer Knives	Disc, Type E 12"-16"	HA60-K-BA
Woodworking Chisels	Wheel	A60-L6-V30

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Increased Waste Wood Utilization

The most striking development in the field of pulpwood production in the past year was the increased tempo of interest in the utilization of woods and mill waste by the pulpwood industry. Because such an endeavor necessarily calls for close coordination and cooperation between pulp mill and woodland operations, these two groups are beginning to attach great importance to working out their mutual problems. More time is being devoted to those problems associated with pulpwood and its relation to the end manufactured products.

Suitable sawmill waste utilization equipment shows promise of coming into the field during 1954 which can cause more active participation in this new and most advanced program of "getting the most out of each harvested tree".

National Forest Areas

National Forest and Other Areas, By States and for Alaska and Puerto Rico: June 30, 1952.

(Areas in acres: comprises national forests, purchase units, experimental areas, land utilization and other areas under Administration of Forest Service, but not given a national-forest status.)

STATE OR OTHER AREA	Gross Area	Not under Forest Service Administration	Under Forest Service Administration
TOTAL	229,164,853	47,871,573	181,293,329
Alabama	2,435,749	1,815,020	620,728
Arizona	12,159,651	674,718	11,484,933
Arkansas	3,906,746	1,235,228	2,361,520
California	25,078,194	5,138,774	19,939,420
Colorado	15,232,996	1,504,097	13,728,899
Florida	1,244,229	168,979	1,075,250
Georgia	1,732,322	1,067,996	664,326
Idaho	21,569,943	1,293,951	20,275,992
Illinois	812,654	581,759	230,895
Indiana	784,647	667,541	117,106
Iowa	218,671	213,922	4,749
Kentucky	1,411,699	954,521	457,178
Louisiana	1,374,977	714,292	960,685
Maine	878,283	829,155	49,128
Maryland	4,318	3,208	1,110
Massachusetts	1,651	---	1,651
Michigan	5,161,057	2,605,121	2,555,936
Minnesota	5,041,660	2,364,588	2,677,072
Mississippi	2,777,325	1,728,649	1,048,676
Missouri	3,459,999	2,104,692	1,355,307
Montana	19,013,176	2,452,521	16,562,655
Nebraska	207,209	1,181	206,028
Nevada	5,378,726	320,993	5,057,733
New Hampshire	802,714	125,540	677,174
New Mexico	10,279,550	1,269,657	9,009,893
North Carolina	3,592,936	2,478,392	1,114,044
North Dakota	764,425	763,905	520
Ohio	1,466,029	1,362,187	103,842
Oklahoma	344,269	163,552	180,717
Oregon	17,378,050	2,561,151	14,816,899
Pennsylvania	743,999	272,577	471,422
South Carolina	1,423,339	936,378	586,961
South Dakota	1,403,357	287,945	1,115,412
Tennessee	1,532,124	940,849	591,275
Texas	1,716,985	1,058,886	658,079
Utah	9,009,452	1,128,236	7,881,216
Vermont	629,004	403,818	225,186
Virginia	4,017,962	2,575,505	1,442,457
Washington	10,746,707	1,063,484	9,683,223
West Virginia	1,832,868	929,546	903,322
Wisconsin	2,023,858	562,142	1,461,716
Wyoming	9,016,134	449,031	8,567,103
Alaska	20,777,547	34,785	20,742,762
Puerto Rico	186,162	153,049	33,113

25% B.C. Forests Now Under Sustained Yield

Twenty-five percent of British Columbia's productive forest is now on a sustained yield basis, according to Robert Bonner, provincial attorney general.

How Lumber Compares In Rail Carloadings

Commodity	Actual Carloadings
Coal and coke.....	1,830,687
LUMBER & FOREST PRODUCTS	**574,687**
Iron and steel	574,409
Gravel, sand and stone	537,992
Petroleum and petroleum products.	367,564
All grain	307,327
Flour, meal and other mill products	306,260
Paper, paperboard and prepared roofing	272,459
Ore and concentrates..	260,049
Fertilizers, all kinds...	193,926

Estimated Average Annual Timber Losses to Insects in Western Pine Region During Last Two Decades*

	1931-1940 (M. Bd. Ft.)	1941-1950 (M. Bd. Ft.)
California and Nevada	1,455,000	880,000
Oregon and Washington .	1,505,000	590,000
Northern Rocky Mountains ..	1,145,000	675,000
Southern Rocky Mountains ..	555,000	560,000
Average Annual Loss	4,660,000	2,705,000

*Compiled from U. S. Bureau of Entomology and Plant Quarantine sources.

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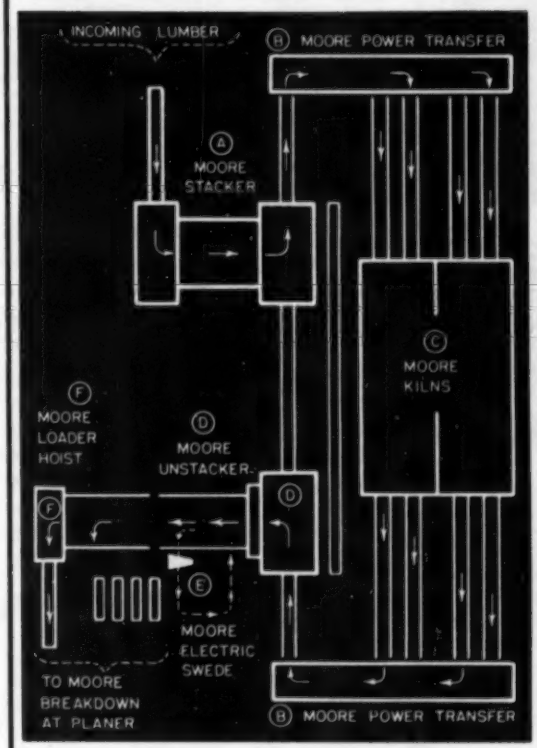

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Cooperage Stock—Production, by Kind: 1909 to 1947

(Staves and hoops in thousands; heading in thousand sets)

KIND	1909	1919	1927	1929	1931	1933	1935	1937	1939	*1947[1]
Staves:										
Tight	379,231	353,825	324,127	357,353	204,624	154,575	221,619	205,286	182,431	131,104
Slack	2,029,548	1,121,324	961,782	1,039,450	537,177	426,585	439,970	574,768	526,315	406,781
Heading:										
Tight	20,691	24,274	26,445	30,329	20,090	13,031	15,259	13,377	14,277	9,807
Slack	140,234	87,381	59,337	72,591	43,375	37,461	35,992	54,318	46,465	36,539
Hoops	375,793	140,772	134,596	133,054	94,311	61,161	51,818	68,152	32,209	10,457

*Latest published figures.
[1]Excludes small amount produced in other than cooperage stock and cooperate industries.
Source: Bureau of the Census.

Red Cedar Shake and Shingle Mills in U. S.

As of date	No. of Mills, Active & Idle*	Machines Installed Active & Idle
December, 1953	185	468
December, 1952	223	517
December, 1951	244	559
December, 1950	269	590
December, 1949	280	583
December, 1948	285	590
December, 1947	303	594
December, 1946	239	553
December, 1945	185	516
December, 1944†	159	498
December, 1943†	158	492
December, 1942†	252	652
December, 1941	373	801
December, 1940	382	912
December, 1939 (Shingles Only)	377	
December, 1938 (Shingles Only)	342	

* Idle mills are those which have temporarily suspended operations.
† Does not include machines inactive during the war.
Source: Census Bureau.

Production of Red Cedar Shingles & Shakes—U. S.

(in squares)

Years	Shingles	Shakes
1953	2,577,849	227,706
1952	2,695,180	175,788
1951	2,825,290	147,984
1950	3,490,614	148,315
1949	2,984,388	103,670
1948	3,315,364	106,519
1947	3,737,704	65,706
1946	3,177,771	29,693
1945	2,838,572	8,459
1944	3,242,699	4,163
1943	3,450,529	2,961
1942	5,007,362	15,264
1941*	5,674,244	.....
1940*	5,791,675	.....
1939	6,210,102	.....
1938	5,891,882	.....
1937	5,279,349	.....

* Includes shakes
Source: Census Bureau

Montana Annual Production of Christmas Trees

Of considerable economic importance to Montana is its well-developed Christmas tree industry. Montant has averaged around 3,000,000 trees shipped for the last ten years. While no actual figures on the monetary value are available, this industry for the last five years has averaged over $1,000,000 in annual production.

The leading importing states in recent years were Illinois, Iowa, Texas, Kansas, Missouri, Oklahoma, Nebraska, Indiana and the Dakotas.

1936	1,242,500	1945	2,723,500
1937	1,534,500	1946	3,299,400
1938	1,676,000	1947	2,515,640
1939	1,967,350	1948	3,098,886
1940	2,338,350	1949	3,256,956
1941	3,082,650	1950	3,017,780
1942	2,203,750	1951	3,084,540
1943	3,102,480	1952	2,644,600
1944	2,755,750		

Source: Forest Service.

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Forest Fires– Number, and Area Burned Over on Federal State and Private Forest Lands: 1932-1951.

(Area in thousands of acres)

	FEDERAL LANDS, PROTECTED AREA*			STATE AND PRIVATE FORESTS‡					
				ON PROTECTED AREA			ON UNPROTECTED AREA		
Calendar Year	Forest Area†	Number of Fires	Area Burned Over	Forest Area†	Number of Fires	Area Burned Over	Forest Area†	Number of Fires	Area Burned Over
1932	138,525	4,933	419	366,733	55,567	3,234	220,617	105,899	38,410
1933	176,696	4,517	380	366,259	48,770	3,343	218,664	87,435	40,167
1934	182,167	8,064	658	282,979	61,254	3,515	209,558	93,345	37,648
1935	180,443	7,962	228	288,751	54,592	2,311	204,379	77,743	27,796
1936	187,122	11,144	425	298,365	73,709	3,792	195,650	141,432	38,990
1937	182,872	9,468	90	301,911	54,292	1,254	182,763	121,449	20,637
1938	191,860	9,873	316	308,458	76,236	2,623	158,884	146,030	30,876
1939	157,691	12,356	522	278,919	85,677	3,266	148,812	114,638	26,660
1940	153,723	14,076	483	281,706	73,527	2,934	146,749	107,824	22,432
1941	153,559	10,002	437	282,074	80,994	3,138	143,743	108,706	22,830
1942	153,561	9,941	576	290,928	75,849	3,863	136,687	122,428	27,415
1943	183,052	9,892	702	299,331	78,815	3,860	131,275	121,619	27,772
1944	212,344	8,985	375	301,228	56,148	2,301	129,919	66,096	13,873
1945	213,210	8,539	445	302,942	48,176	2,456	126,959	68,013	14,780
1946	213,597	9,670	321	318,505	66,103	2,253	120,489	96,505	18,117
1947	215,361	8,928	318	327,968	71,442	2,814	111,036	120,429	20,093
1948	217,724	6,681	312	339,463	61,095	1,962	99,531	106,429	14,283
1949	214,505	9,592	317	357,168	78,649	2,320	81,826	105,533	12,760
1950	212,622	8,418	391	360,564	96,578	3,407	66,130	103,404	11,720
1951	212,502	8,638	471	363,414	97,230	3,056	63,280	58,222	7,255

"In 1952 the Forest Service controlled 11,965 fires in the national forests. During the year 219,590 acres of forest and watershed lands within the forest service protective boundaries were burned over." – Report of the Chief, F.S., 1953.

"In 1953, up to July 31st, the Forest Service fought 4,360 fires in the national forests. The acerage lost was 160,250 acres burned in the first 7 months." – Chief's Report.

* Continental U.S.; includes National Forests, Interior, Soil Conservation Service, TVA, Public Domian, etc.

‡ In continental U.S. and Hawaii. Data reported to Forest Service by its field offices, cooperating agencies, other Government bureaus, and similar sources. Statistics on unprotected areas based on estimates only.

† Prior to 1939 forest area included total area needing protection. Beginning with 1939 this area included only forest area needing protection, which accounts for reduction in areas between 1938 & 1939. Source: Forest Service.

Major Mill Cut – Lake States & Northeast

(Continued from Page 81)

Erickson Hardwoods, Onalaska, Wis.	6,700,000
Cotton-Hanlon, Odessa, N. Y.	6,130,899
Great Northern Paper Co., North Creek, N. Y.	6,000,000
W. T. Fox Company, Portland, Maine	5,360,000
Schneider Bros., Marquette, Mich.	4,944,300
Oval Lake Dis Corp., Tupper Lake, N. Y.	4,911,100
Fisher & Young, Titusville, Penn.	4,297,444
The John Morgan Lbr. Co., Pittsfield, Penn.	4,000,000
Phillips Flooring & Lbr. Co., Phillips, Wis.	3,958,000
Knoke Lumber Co., Appleton, Wis.	3,381,159
Blount Lumber Co., Lacona, N. Y.	3,300,000
Beecher Falls Mfg. Co., Beecher Falls, Vt.	3,218,245
A. Mason & Sons Inc., Peru, N. Y.	2,950,000
Ward Lumber Co., Jay, N. Y.	2,600,000
C. B. Norton & Son, Great Valley, N. Y.	2,529,075
The Green Glen Inc., DuBois, Penn.	2,153,335
J. C. Campbell Co., Duluth, Minn.	1,450,000
Michigan Pole & Tie Co., Newberry, Mich.	843,775

North Rocky Pole Cut Rises in '52

Pole production was up six per cent in the highly important Northern Rocky Mountain area made up by Montana, northern Idaho and northeast Washington, according to figures released just recently, which are for 1952. North Idaho out-produced Montana, which led in 1951, to regain first place in area standings. Western larch took over second place from lodgepole pine in the species standings.

Number of Poles Produced in 1952

Species	Northern Rocky Mountain Region				Percent of total
	Montana	North Idaho	Northwest Washington	Total	
		Number of pieces			Percent
Western redcedar	11,792	151,829	54,100	217,721	44.1
Lodgepole pine	104,621	... ...	... ...	104,621	21.2
Western larch	56,591	63,323	32,847	152,761	30.9
Douglas-fir	8,981	8,625	1,443	19,049	3.8
Total	181,985	223,777	88,390	494,152	...
Percent	36.8	45.3	17.9	100.0	100.0

Source: Data collected by Rocky Mountain Pole and Treating Association and compiled by Northern Rocky Mountain Forest & Range Experiment Station.

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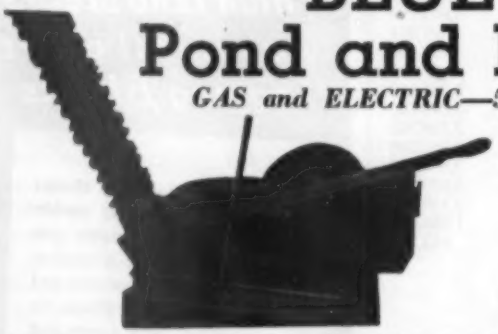

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WORLD REPORTS

EUROPE

FINLAND

By

JOUKO KOLJONEN

Central Assoc. of Finnish Woodworking Industries, Helsinki

The time after the Korean trend has been a difficult one for the Finnish forest industries because of the heavy drop of prices. In some fields the production has been heavily curtailed but in spite all this there has not been any wider lay-offs.

There has been a good deal of activity in the fields of barking and some important inventions have come up in mechanical barking in forests and at storage-sites.

Most parts of the pulp and paper mills have had enlargements and much interest has been given to the bleaching problems.

Production 1953

Chemical pulp—1.132.650 tons
Mechanical pulp—795.717 tons
Paper
newsprint—447.391 tons
other—266.797 tons
Board—197.031 tons
Wallboard—103.819 tons
Plywood—217.557 m³
Sawn Goods—850.000 std.
Prefabricated Houses—926.000 m³ = 94.240 std.

The capacity of chemical pulp mills will rise from 1,460,000 tons in 1953 to 1,630,000 tons in 1954. The capacity on paper mills will increase by 130,-000 tons in year 1954.

The market situation seems to be somewhat easier than last year and the Finnish forest industries are looking forward with trust.

GERMANY

By

FORSTMEISTER REICHENSTEIN

Bundesanstalt Reinbek

Hamburg, Germany

In 1953 wood imports reached altogether 7.1 million fm without bark—the top level after the war—having increased by 0.7 million fm as compared with 1952. The following table shows the quantities and changes of the imports in comparison to former years.

The Wood Import of Western Germany
(thousands of festmeters)*

	1950	1951	1952	1953
Saw logs	213	378	444	690
mining timber	40	79	619	510
pulpwood	497	955	1,279	882
sawn timber[1]	837	1,069	2,177	2,847
veneer/plywood[1]	39	63	91	137
wood pulp, cellulose[1]	207	267	337	538
paper, cardboard[1]	207	267	337	538
others[1]	27	69	57	104
Sa.	3.073	4,377	6,344	7,100

[1]) calculated in round timber without bark
*One festmeter = 424 bd. ft. = one cubic meter

The fall in wood prices on the world market affected wood imports, too. Sawn softwood had been chiefly imported from Austria (0.9 million cu.m.), Sweden (0.5 million), Finland (0.3 million) and Yugoslavia (0.14 million). As regards pulpwood 0.75 million rm (=0.21 million cords) —i. e. nearly ¾ of the total pulpwood import — came from the Northern States. The import of saw logs from tropical regions rose to 329,000 tons, of which ⅓ came from French Equatorial Africa, closely followed by Belgian Congo (63,000 tons), French West Africa (57,000 tons) and Portuguese West Africa (31,000 tons).

Hardwood Import Problem

The plywood and veneer industries in the USA have a relatively great variety of home grown species at their disposal. Of foreign wood species, mahogany species only have grown somewhat important. Western Germany, however, has nothing but few wood species available for its plywood and veneer production. The home-grown beech ranks first in this respect.

The price of beech suitable for the production of plywood and veneer is therefore dependent on the volume of Okoumé possible to be imported to Western Germany from West Africa. This is of great importance to the forest owners of Western Germany. In opposition to the USA, cut and sale of wood is, in most cases, carried through in Western Germany by the forest owners themselves. Deliveries of wood by concession, lease or sale on the stump hardly take place.

GREECE

By

GEORGE TSOUMIS

U. of Salonica, Greece

According to statistics kept by the Ministry of Agriculture Greece is producing today about 130.000 cubic meters (about 57.000.-000 bd. ft.)of timber, in log form. This is, however, far from being enough to cover our needs, so that we import annually, mostly from Europe, about 800.000 cubic meters (about 300.000.00 bd. ft.) of wood in the form mostly of structural timbers, lumber, and of poles, piling, cross ties, pulp, etc. Some veneer is also imported, and most of the plywood.

This wood, the produced here and the imported one, is the raw material for a great number of wood-using industries, big and small, from sash and door, to boats, furniture, and also veneer, plywood, etc. In no case, however, are mass production methods employed like those in USA.

The major happenings of the forest industries of Greece during 1953:

Four big sawmills converting logs to timbers and lumber, which were established some years ago, in the best forest regions of the country, operated by the Forest Service, were equipped during 1953 with new machinery (band, circular and gang saws) in an effort to improve the quality of the lumber and reduce the waste. A fifth big saw-mill was rebuilt and equipped with a new circular saw system.

It must be also mentioned that a wood preserving plant, owned by the Greek railways, has started to work again after some years of shutdown.

NETHERLANDS

By

Professor dr G. Houtzagers

Forestry Department, Agricultural University, Wageningen, The Netherlands

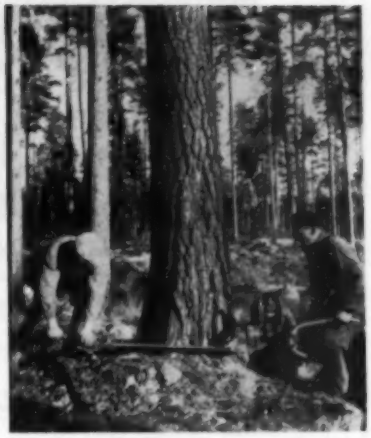
In the Netherlands only 7.6% of the land surface is covered by forests. So a major part of the yearly wood-demand must be imported (around 1¼ billion board feet).

A major occurrence in forestry recently is a decrease in the cultivation of Scotch pine and an increase in the cultivation of exotic wood-species: Douglas fir, red oak, Japanese larch and Sitka spruce.

We are trying seriously to raise still more of our own yearly production.

The timber import consists mainly of sawn timber, so that the sawmills in the Dutch economy are not of large importance. Because of the fact that our country is laying at the sea, the imported soft-wood originates chiefly from the North-European countries. In Middle-Europe as regards timber import, Austria is important to us.

There are some triplex (plywood) industries of significance in Holland which are working up African hardwoods. The only Dutch board industry makes use of is made from straw as raw material with added mechanical wood pulp. Concerning the use of hardwood in general, there is some talk about an increase of tripical (especially African) wood-species; on the other hand in Europe the consumption of the oak, a species that occurs much in Europe and that is used still centuries ago, is decreasing by the lowering production. The planting of the quick-growing poplar and the use of the timber for several purposes, is promoted as much as possible.



YOU CAN'T GO MUCH LOWER on your undercut than these Swedish loggers are doing here. Scene is typical Swedish pine forest. 1953 was a fair year in Sweden in plywood trade, better than '52 but below '50 and '51.

SWEDEN
1954 Looks Good

By

NILS F. NILSSON

Secretary, Swedish Plywood Manufacturers' Association

The situation on the Plywood market in Sweden in the early part of 1954 can be described as quite satisfactory and the demand is at present fairly brisk. The mills, it is learned, now have a somewhat bigger order stock compared with the corresponding period last year. With reservations for eventual fluctuations and disturbances in the general world trade a fairly stable market during 1954 can be anticipated. A price increase is most desirable considering the present comparatively high prices for logs which the mills have to pay. The prices paid for logs intended for sawn goods have as usual a bearing on the purchases of the raw material for the manufacture of Plywood.

In 1953 there was a quiet period in the early part of the year but a change for the better arose as time went by with quite good sales figures during the last four months of the year. As a rule there are only very negligible changes in the demand for Plywood for home consumption with the result that the mills always can look upon the home market as a sound and reliable source of outlet. For obvious reasons the sales to various export markets are not quite as regular. Thus in 1953 the export to Great Britain was hampered to a great extent by the import restrictions that were prevailing there. However, Swedish Pine Plywood

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found a market in quite a few overseas countries to which the mills had not previously exported. According to preliminary figures (official statistics for 1953 are not yet available) the export last year exceeded after all the figures for 1952 but did not reach the peaks of 1950 and 1951.

Imports into Sweden are usually on a small scale as the local mills cater for the home market without great difficulties. However, certain specialties have to be imported from other countries.

The total production of Plywood and Blockboards in Sweden normally reaches about 68,000,000 sq. ft. 3/8" basis. 1953, however, showed a somewhat lower figure. About half the quantity goes into home consumption, mainly used in the furniture industry, for joinery and in the building trade, etc. Both Interior and Exterior grades are produced and with the latter grade being more and more used the number of uses will naturally increase.

SWITZERLAND

By
CHARLES LANZ

Swiss Federal Forestry Inspector, Bern

On the whole the Swiss forest industries reached during 1953 a quite satisfactory turn-out, due to a still huge building activity and voluminous exports. The returns, however, of numerous lumber processing enterprises were less favorable than in previous years owing to the facts that prices for round lumber were on the rise and that the increase of price could not entirely be shifted on to the processed and finished goods which stand in keen competition with other products. The entering of the market by those cheaper building and working materials let the output in some lumber processing branches go down.

Lumber Prices on Rise

The prices for domestic round lumber still have a rising tendency, processed and finished goods will become more expensive again so that the substitution of lumber by other basic materials is even progressing. This means a serious trouble to all interested circles, for it is known by experience that even lowering prices do not likely regain lost markets. A similar development is to be observed in most of the other European countries. The Swiss and international lumber organizations are trying hard to secure or even expand the traditional fields of utilization by sponsoring research, rationalization of production and processing, as well as by extensive advertising.

UNITEDKINGDOM

London Report

by ANTHONY BENN

Vice president and joint managing director, Price & Pierce, Ltd., London

The United Kingdom has to import nearly all its softwood, other than a small home-grown production of about 75 million feet. Its overall annual import of softwood before the war was approximately 4 billion feet, coming principally from Finland, Sweden, Russia and Canada.

During the war and after the war, imports have of course been greatly reduced to less than 2 billion feet in some years and they are now running at the rate of 2.8 billion feet. Imports were artificially limited by outright control during the war and in the early post-war years, and then after a period when controls on imports were lifted but controls on consumption were kept in force. Finally, last autumn all softwood controls were lifted and many

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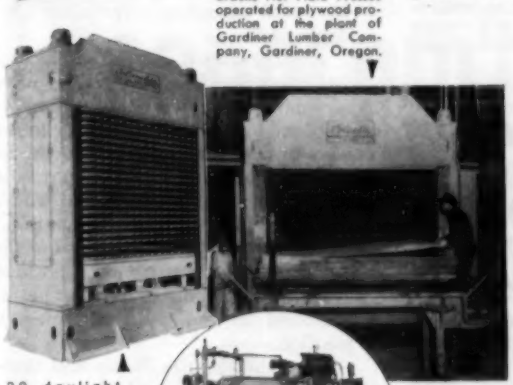

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Columbia Hydraulic System showing arrangement for gravity feed to high volume pump.

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Nott-Atwater Company.....Spokane, Washington
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Moty & Van Dyke, Inc.....Klamath Falls, Oregon
Hendrie & Bolthoff Co.....Denver, Colorado
Garlinghouse Brothers.....Los Angeles, California
Industrial Supply Co. .....Billings, Montana
Flook Brothers, Ltd.....Vancouver, B.C., Canada
Campbell Industrial Supply Co...Tacoma, Washington
Dodge-Yakima Supply Co.....Yakima, Washington
Industrial Lubrication Supply Co.....Eugene, Oregon
Miller & Stern Supply, Co...San Francisco, California
Dugan-Fiege Co.....Los Angeles, California
Hudson Corporation.....San Diego, Calif.
Sawtooth Company.....Boise, Idaho
Wilkinson & McClean, Ltd...Calgary, Alberta, Canada
Bart-Sayer Co.....El Centro, Calif.

thought that there might be an increase in imports. It is true that the opportunity may well be taken to fill in gaps in specifications and quantities in various parts of the country, but there are several factors working against any very sharp rise in the volume of imports or consumption.

Lumber Prices Up 500-600%

One of the greatest of these factors is the cost of lumber today, which directly affects the amount of stock which importers are able to hold, and which also gives just that extra amount of encouragement to the use of substitutes for lumber. For example, in general terms, the price of lumber c.i.f. United Kingdom is now 5 to 6 times pre-war, whereas steel, cement, brick and aluminum which in many cases are active competitors of lumber in the United Kingdom have risen only 2 or 3 times pre-war. The west coast of North America is becoming a high-cost producing area and losing its initial advantage over other producing areas.

Another factor is that the Baltic has been Britain's traditional source of supply. Baltic woods are generally of milder texture and closer grain, easy to work, take nails better without the same tendency to split, and the knots are smaller. Baltic woods are also delivered better manufactured to size, well marked on the ends and in good seasoned condition. West coast woods should be better seasoned to command a preferred position.

Nevertheless, the Baltic and Russia cannot supply all the imports needs of the United Kingdom and there will always be room for lumber from North America. Britain will buy more from there if there is more two-way trade to provide the essential dollars for purchase.

Relaxed Situation Seen in U.K. Trade

By

BYRON LATHAM

London, England

(The author is head of the 139-year-old firm of James Latham, Ltd., London, one of Britain's leading lumber authorities, and here expresses his views on the 1953 situation in the United Kingdom.—Editor)

The customary log auctions have already been held in Sweden and Finland, when prices were much the same as last year. The softwood trade is now quite free from restrictions, but importers will undoubtedly finish the year with a very large stock. It remains to be seen what increased consumption will take place at the present high level of world softwood prices.

HARDWOODS. During the year the import of hardwoods from outside the British Commonwealth was much restricted, licenses being freely granted only in the case of Yugoslavian hardwoods and Siamese teak. It was therefore with great pleasure that the United Kingdom hardwood trade received the news on November 12 that once more open individual import licenses would be available for hardwood imports outside the dollar areas.

Dollar woods are still restricted, and during the year dollars have been available for very special items such as a little Canadian maple and birch lumber, and American ash and hickory logs.

There was an increase in hardwood imports in 1953 over the preceding year, but generally speaking prices have been lower.

PLYWOOD. The plywood trade has not yet shared in the general freedom granted by the British government to both softwoods and hardwoods. It is hoped that by Easter 1954 at the latest, the plywood trade will be substantially free from control.

Plywood imports from dollar countries are still very limited on account of currency restrictions. Items are restricted to such specifications of a shipbuilding nature such as may be imported from Canada, provided the goods are not to be found in the British national stock. Should any reasonable amount of freedom be granted shortly by the government, a much more active plywood market may be expected in 1954 than in the previous years.

USSR

Big Problems Go With Big Timberland

In the USSR the volume of standing timber is so tremendous that by comparison it tends to dwarf the forest resources of many other important timber producers on the present-day scene. Yet this vast nation has a long way to go before it matches the Western free world in logging transportation efficiency. Executive orders originating in Moscow have failed to put the forest industries on the stable footing de-

sired by the government. While there are many facets to the Russian forestry picture, few reports have presented as clear and concise a view of the situation there as does Col. W. B. Greeley's chapter on Russia in his book "Forest Policy." The Colonel's study of Russia produced these significant facts:

> Russian estimates place their total stand of merchantable timber at something like 7¼ trillion board feet, 65 or 70 per cent of which is mature. On millions of acres overripe timber is decaying. But Russian forests are the world's greatest source of coniferous timber, and their potentialties under good management and access are enormous.
>
> No country in the world's history has lifted its logging and wood-fabricating industries by the bootstraps as has Communist Russia or against greater obstacles. The most serious handicap is the inaccessibility of her forests in Asia and north-eastern Europe. In the last Five-Year Plan, the Lumber Ministry ordered 53 per cent of the logging operations shifted to new locations in the north and east. Large sums were set up for extending and double-tracking railroads, for building narrow-gauge tramways, for motor roads and canals, for tugs and machines to handle logs on the ice. The ministry also ordered the mechanization of logging increased from the prevailing 32 per cent to 75 per cent. The department had 13,000 electric felling and bucking saws. Sixty thousand more were to be provided, together with 16,500 diesel-driven tractors and many motor trucks to reduce dependence upon horse logging.
>
> Any attempt to appraise the policy of Russia in precise terms is hazardous. Russia is in a state of flux. The changes and fermentations set off by the Revolution have not run their course. Things are moving in Russia, forestwise and otherwise, at a pace no other country has ever dreamed of. What seems true today may not be an accurate picture tomorrow.

YUGOSLAVIA

By
I. VULENTIN & M. PETRIC
EXPORTDRVO, Zagreb, Yugoslavia

During 1953, the wood-using industry has put into operation several new plants, among them two of considerable significance: one plywood factory of higher capacity (abt. 10,000 cu. mt.) using high class Beech peelers, and a large woodpulp and cellulose manufacturing plant, of European capacity and equipment.

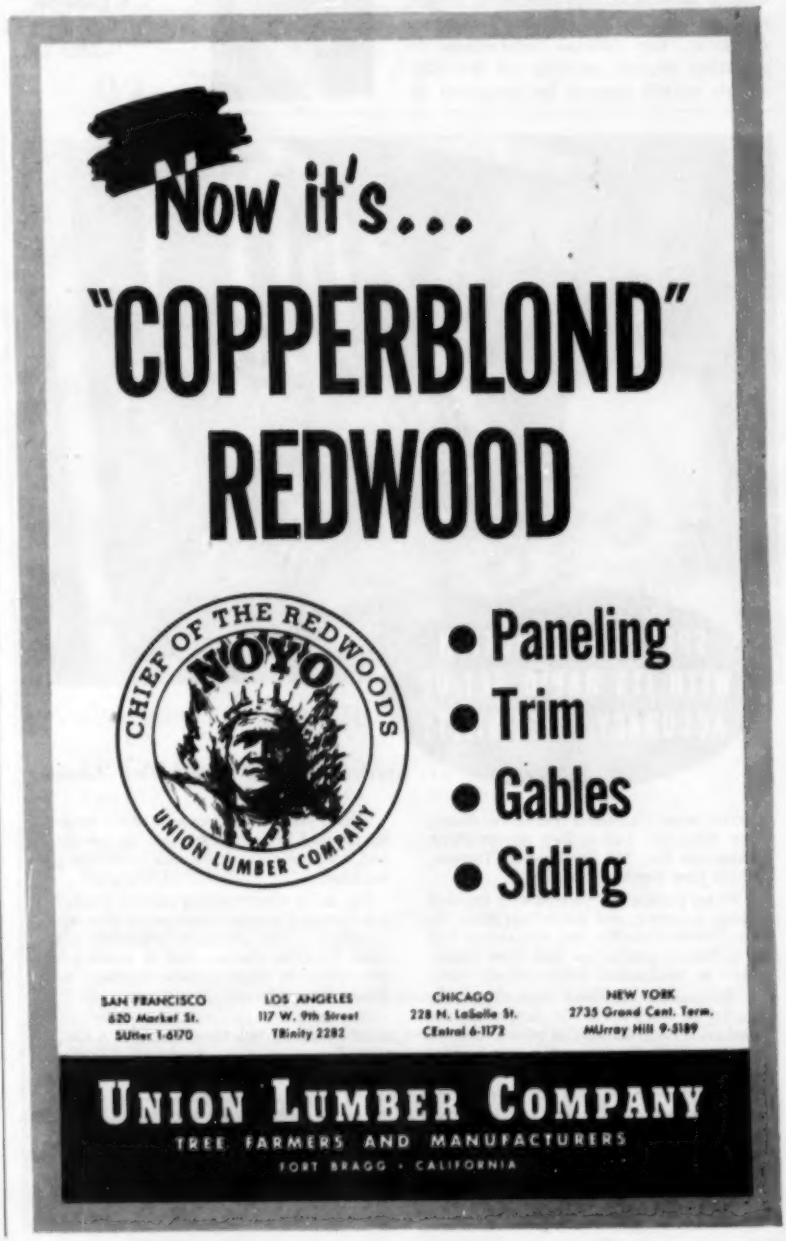
Wood and wood products still account for a large percentage of Yugoslav export trade. In 1952 they totalled 18.68% of exported value, the percentage for the first six months of 1953 rose to nearly 30%. Forest and wood-using industries' exports are handled either directly by manufacturers themselves, or, as a general rule, by exporting agencies acting as manufacturers' representatives. The leading and most known among them are: "EXPORTDRVO"—Zagreb, transacting about 30% of the total wood and wood-products exports of Yugoslavia, leading enterprise for every kind of broad-leaved sawnwood and veneers: "SIPAD"-Sarajevo, for coniferous and Beech sawnwood, plywood: "RUDNIK" — Belgrade, for broad - leaved sawnwood, veneers; "JUGODRVO" — Belgrade; "LIGNUM"—Zagreb, and other firms.

A brief analysis of the export figures of the main articles of wood-using industries, relating to the first six months of 1953, as compared with respective figures 1952, shows an increase of finished articles: boxboards, furniture and parts of furniture, various household articles, articles for office and school use.

Sales of Yugoslav wood and wood-products went in 1953 to 39 foreign countries on all continents. The USA were second largest buyers of bentwood chairs in 1952, further of furniture and furniture parts, tools and tool handles, walking and umbrella sticks.

The export situation, too, seems to be rather promising: the demand is tending to increase slowly but steadily, and the prices are also of rising trend. Plywood and many wares factories are overbooked with orders for some time to come.

In present circumstances, the main problem seems to be to procure sufficient and adequate raw material, rather than how to get rid of the manufactured goods.



WORLD REPORTS

LATIN AMERICA

ARGENTINA

Lumber Industry Slows To a Creep; '54 Better

By
EINO HEINONEN

Chairman of the Board, Heinonen, S. A. Comercial e Industrial, Buenos Aires, Argentina

During 1953, the general business activity in Argentina has continued slow and this has been experienced also in the lumber business. Anyhow, the official restriction in granting import permits for the soft woods which cannot be obtained in the country, has made it very difficult to cover even the decreased demand, because the quantities imported principally from neighboring countries have not been enough. The wood of local origin, hard and semi-hard, has regularly been received and certain scarcity is only noted in fine quality wood, such as Peteriby, due to the fact that the best logs were used in the manufacture of veneers.

Hopeful for 1954

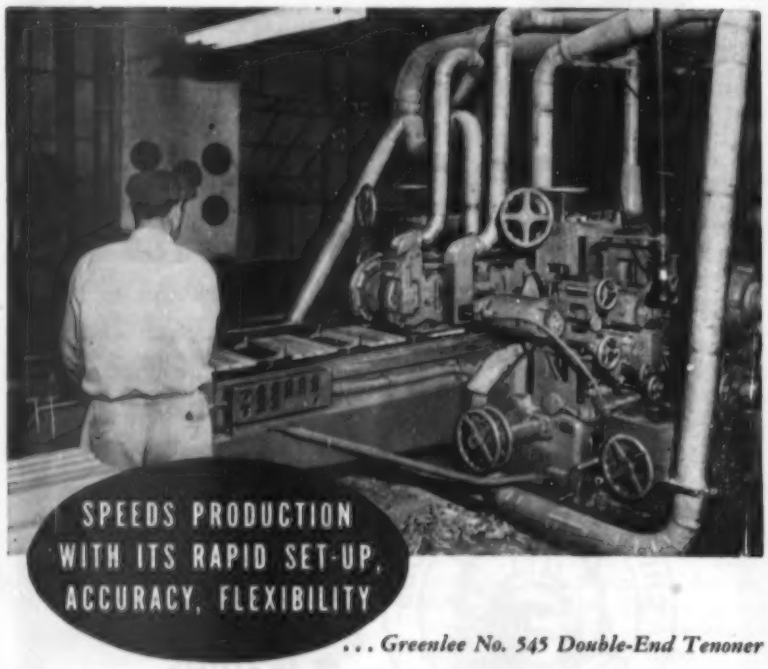
For the year 1954, much better prospects are foreseen as concerns the business in general, inasmuch as the government, in accordance with the five years plan will start much new construction and will further the constructions of houses for employees and workmen in the form of credits and mortgages. It can be calculated that to realize this plan the country is forced to import a quantity of about 32 million board feet monthly of continental or European origin. For many years Brazil has supplied about 80% of Argentine softwood requirements.

Scarcity of home-made plywood has not been experienced during 1953, due to the heavy decrease in the demand of this article. However it is latent and all the consumers are aware of it that the problem of a shortage of quality plywood will turn acute as soon as the consumption increases to the normal level. The import has disappeared for four years and the local industry produces plywood mainly from cedar, guatambu, pine (Araucaria angustifolia) and other woods in minor scale. The

Industry Nearly Stalled

Argentine consumption of veneers for stylish furniture was mainly based in the use of walnut and mahogany and the prohibition to import both veneers originated the importation of the same woods in logs which were cut here in several new veneer mills. Actually there is a complete lack of walnut in the market whereas a stock of mahogany is reported. Due to the paralization affecting the business in general during 1953, there has been very little interest in continuing to cut, inasmuch as the industry preferred to put their factories in condition for 1954, where a real improvement is expected.

On account of satisfactory grain crops 1952-53 and 1953-54, the outlook is good in Argentine economical life in general, export trade is picking up, but I am sorry the same cannot be said yet about import trade. The softwood position causes many worries, as practically no stocks are available.



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Industry Is Depressed, 5-Year Plan May Help

By
Angel R. Oliva
Buenos Aires, Argentina

We have had a hard year and although the month of December renewed hopes for the future, the passing of January has resulted in a return to the same situation of diminished earnings and production volumes.

The fact is that from January till March activities have been curtailed as a result of vacations. We are hoping optimistically that as this period eases by we will reach full production, barring a repetition of the past year in which the habitual state of the market was characterized by tremendous "ups and down."

There has been an intense period of readjustment on the part of producers within the lumber industry here. However, we believe that the situation in general will improve gradually from now on, especially in view of the Government's Second 5-Year Plan and the reactivation of a home building program.

It seems best to continue to maintain faith and be optimistic as such, and it is also essential that wise investments be made in mills and other industry installations so that production facilities will be available in the future when needed.

BRITISH GUIANA

By
ANTHONY F. BENNETT
British Guiana Timbers, Ltd., Georgetown, B. G.

The item of chief interest to lumbermen in 1953 was the opening of the new mill at Houston, near Georgetown, by British Guiana Timbers, Ltd. The plant was officially opened February 15, 1954. The old gang-saw mill owned by the same company at La Penitence, a mile or so further down the Demerara River, has been closed and is up for sale.

The principal plant of the £600,000 Houston Mill, which is designed for a daily output of 35,000 ft. B.M., consists of two 72" White band mills, two 54" and three 48" Robinson band resaws, and seven circular saws. Two saw-dust fired Stirling boilers supply two steam-engined 250 k.w. alternators.

Other equipment includes a White 5-cutter planing and moulding machine, and two 12,000 ft. B.M. Capacity Kilns. Seasoning of lumber—other than air-drying by the Forest Department—has never been carried out before in the Colony and experiments are still in progress to find the most satisfactory drying schedules for various species. The total covered storage capacity in the Mill is 5,000,000 ft. B.M.

This Mill will be able to supply the lumber needed for the new Government- and Private-Enterprise-sponsored Housing Projects for rapid development of the Colony. It is hoped that many species other than Greenhart will be used in this building program. The Forest Department is anxious to find a market for these woods (Mora, Locust, Manni) and timber companies are naturally keen to increase the yield per acre from their Forest concessions, but so far a very conservative public has quite unjustifiably insisted on using Greenheart where other species would be quite suitable.

In 1953 total forest production was just under 4,500,000 cubic feet of which 58% was Greenhart. Of this 3,800,000 cubic feet was milled, producing nearly 26,000,000 ft. B.M. and the balance was exported in the form

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of Greenheart hewn squares and piling (86%) and round logs of other species. Over 4,000,000 ft. B.M. of sawn lumber was exported of which 94% was Greenheart. Of these exports 41%, valued at $B.G.896,000 went to the U.K., 31%, valued at $B.G.713,000 went to the U.S.A. and 28%, valued at $B.G.485,000 to Canada and other countries.

Enquiries for supplies in the U.S.A. should be addressed to Messrs. Greenheart (Demerara) Inc., 52, Vanderbilt Avenue, New York.

This year, with the large increase in Milling capacity now available, forest production is certain to increase—it is hoped by about 12%. Every effort is being made to extend overseas markets, particularly in the U.S.A. and the West Indies,

If I might end this report on a personal note I should like to send greetings to all the friends I made on the West Coast during my brief tour last May. The trouble that they took to show me the logging operations I wished to see was greatly appreciated. It was very encouraging to me to see how closely, broadly speaking, our operation at Wineperu is run according West Coast lines. The chief differences are brought about by climatic and topographic variations, and by the difference in wage-rates which makes the machine of much greater importance in the U.S. No specific items of new equipment have been ordered as yet for our operation, but when replacements are required the methods and machines seen during my visit will be borne in mind.

COSTA RICA

By
J. HENRY
BARBOUR

Central American Manager, Plywood-Plastics Corp., and Gen. Mgr., Industrias Ticas, Ltda., San Jose, Costa Rica

This past year has been a very slow one as far as lumber and log exports are concerned. This results from the following two reasons: first, the leading log exporter (Plywoods-Plastics Corp.) is now owned by Westinghouse Electric Corp. and has stopped logging activities here; second, this has been an election year and companies did not wish to enter into new exporting until the political trends were known.

There were an estimated 6,000,000 feet of logs shipped from here this year. These mainly consisted of among other species, Spanish Cedar for Cuba. Lumber exports were around 800,000 feet, being evenly divided between Spanish Cedar and Cedro Macho.

On the bright side of the picture, local demand has been steadily increasing; large scale local construction is underway with many new housing developments. Woods in the greatest demand for local construc-

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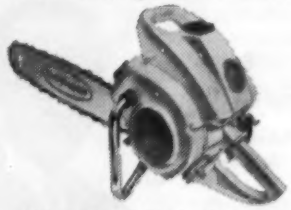

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tion are Laurel, Pachote, Spanish Cedar, and Cristobal. Rough lumber in these woods sell at about $100 (per M.). The demand for precious woods has also increased considerably due mainly to the expanding woodenware industry. Leaders in this industry is the Industrias Ticas, Limitada which markets the INTICA woodenware; this line is sold in the United States and Europe.

The year 1954 is very problematical here. It could be very good, but there are many undecided factors. Prime among these is the political factor; the new government, led by President Jose Figuerres, is known to have socialistic views. Every government move will be watched and closely analyzed because the beginning will probably show the trend of things to come. If no drastic changes appear, it is virtually certain that many new undertakings will start. The United Fruit Company is ready to start multi-million dollar projects on the East Coast; with proper guarantees from the new government, there is little doubt but that this year will show these projects in full production. The resultant lumber demand would entail full production from every East Coast mill. Another project that is on foot—only waiting for political developments is the formation of a syndicate to build a plywood mill here and purchase large timber tracts. There are also many smaller enterprises that may develop. Also, when the attitude is known toward timber exports, there are several European firms ready to start buying Cativo and Cedro Macho logs; prime among these firms are companies from Hamburg, Germany. So, if the political picture is good, 1954 will be a very good year here for the wood industry.

VENEZUELA

By

MARSHALL TURNER
Merida, Venezuela

(The author is an American and forestry graduate of Oregon State College. He has been associated with the forest industries of Venezuela for the last decade, and in recent years has been teaching forestry at the University of the Andes.

The increased demand for forest products is tied to the general prosperity of the country, which is in the midst of one of the greatest industrial expansion programs in history. The boom is financed by a daily income of some $3,000,000, derived principally from a 1,750,000 barrel a day production of crude petroleum. Venezuela will receive an additional source of income from the exportation of iron ore, which beginning this month, will top 10,000,000 tons annually by the year's end. Under such favorable conditions local and foreign capital continues to increase and business conditions are excellent. Government construction programs for schools, housing projects, airports and port facilities, superhighways and skyscrapers take on astounding proportions. The yearly national budget is equal in dollar value to that of India, a country with eighty times its population.

The impact of the good business conditions that the country enjoys has quadrupled lumber production since 1938 and increased the imports of squares, rough lumber and other products sevenfold. Prices for lumber in Caracas, the country's capital city and most important consuming center, vary from $1420 per Mbm. for rough grade 1 mahogany boards, usually green, to $610 Mbm. for imported pitch pine and $440 per Mbm. for low grade hardwood form lumber. The following table illustrates the lumber production and export-import trade, figures in cubic meters:

VENEZUELAN LUMBER MARKET

One Cubic Meter = 424 bd. ft.

Year	Production	Imports	Exports
1938	58,482	4,925	3,612
1945	95,768	15,609	1,497
1950	193,531	33,413	2,168
1951	207,380		

Wood has continued to increase its market. Treasury Department figures show some 45,000 cubic meters

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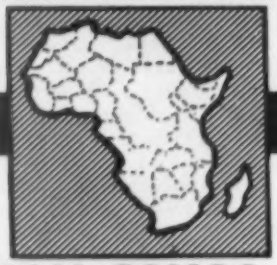

AFRICA

BELGIAN CONGO

Reported by
THE SNAUWAERT CO.
Brussels, Belgium

About 50% of the total area of the Belgian Congo Territory is covered by forests. However, the working of these forests has proven to be extremely difficult for several reasons. Especially bad is the lack of natural means of communication and the difficulty of creating roads, the small amount of native population, and consequently the scarcity of workmanship within these regions. The extraordinary variety of tree types is present, together with new plantings, of which only a few are convenient for the international market, the protection measures being taken for the purpose of conservation of timber. That is the reason why the felling of trees in 1951 reached only 538,000 cubic meters, even though cutting is increased from year to year.

It should be pointed out also that cutting is regulated by legislation. More than 600 forestry enterprises are occupied in the exploitation of our local needs. Those who are in-

IN THE BELGIAN CONGO near a joinery and cabinet-work factory at Leopoldville. Logs which have been floated from up the river are stored on the bank.

A CARGO OF LOGS is being loaded onto a rail car in the forest operation of the C. F. L. Company in the territory of Ponthierville.

Venezuela

(Continued from Page 187)

of pine valued at about $1,370,000 had been imported during the first nine months of 1953. This tends to indicate that Venezuela is rapidly becoming a timber importing nation, while at the same time possessing great forests which fail to meet the demand for certain types of cheaper lumbers. It is ironic indeed that Venezuela, wealthy from the exploitation of its natural mineral resources, is forced by its very economy to a policy which requires her to pay for good forestry practices observed in other countries by importing their timber and wood products, while her forests, another great natural resource, are exploited beyond renewal by operators interested in quick high profits.

Venezuela's need for forestry products and her dependence on imports has played a part in making her an annual 500 million dollar customer for United States products. This can be shown in the following table, based on Commerce Department figures:

UNITED STATES WOOD EXPORTS TO VENEZUELA

Value in Millions of Dollars

	1938	1948	1949	1950	1951	1952
Wood and Paper ..	1.9	12.6	12.8	11.0	15.3	19.1
Sawmill Products	.5	1.4	1.2	.6	1.1	2.9
Wood Manufactures	.7	1.8	3.7	1.9	1.4	1.4
Paper, Related Products	.7	8.4	7.1	8.2	12.2	14.5

The United States and certain other countries enjoy reciprocal trade agreements with the Venezuelan government, and under their terms some logs and rough lumber squares may enter free of duty.

Within the past three years, two plywood plants have been installed and they like other new national industries, enjoy certain free duty privileges for the importation of the machinery, glues and packaging materials. There are no dry kilns, wood treating plants or wood conversion plants but it is logical to assume that these will someday be installed.

No national forests have been created, but several areas have been set aside as national parks where cutting is prohibited. A forestry school was established at the University of the Andes in 1948 and graduates are now employed in the national forest service.

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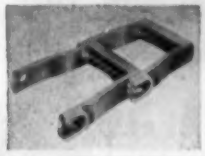


4000 N.W. Yeon, Portland, Oregon AT. 9219

dustrially equipped and who sell a large part of their production number about 10.

Throughout the year 1951 there were 175,000 cubic meters produced in cut timber of which 28,000 cubic meters were exported. Also 128,000 cubic meters of rough timber were exported. The types principally exported are the limba, kimbala, sepelli, wenge, tola, bosse.

All this lumber is adequately treated chemically against insects and parasites and is properly dried. This results in Congo lumber for African, European, and American markets, a very great permanent outlet.

Three plywood factories have been created in recent years which utilize especially the limba tree and use synthetic resin adhesives. To give complete assurance for meeting national requirements these factories exported only about 5,000 cubic meters. There was also exported 3,000 cubic meters of veneering.

We are presenting here a comparative table of Congo lumber exportations to the different nations.

ROUGH TIMBER (Cubic meters)

	1951
Germany	7,243
Italy	494
United Kingdom	3,430
Switzerland	3,324
Belgium	114,876
U.S.A.	1,814
Southern Rhodesia	176
Northern Rhodesia	3,650
Others	705
	135,712 cubic meters

FRENCH CAMEROONS

Export Trade Up As New Woods Available

By PIERRE VETTER
President and General Manager, Cameroons Lumber Co.

The chief trend in 1952 was a marked decrease in production in this country due to lesser demand and the falling of international prices.

In 1953, prices have shown a slight improvement. The demand for timber for export has somewhat increased, though that for the local market has dropped, owning to reduced building activity.

1949-53 export statistics for the French Cameroons timber as compared with 1937 (i.e. prewar) are as follows:

(1 metric ton = 2,240 lbs.)

	1937	1949	1950	1951	1952	1953
	tons.					
Logs	39,575	53,879	68,408	66,527	45,402	46,216
Lumber	11,767	9,041	8,861	13,412	19,669	32,974

These statistics show a marked development in the lumbering activity of this country. Logs export figures show a noticeable decrease since 1949. On the other hand, export of sawn material has considerably increased and reached 300% of 1949 figure.

This trend tendency is due to the fact that during the last few years this country has had to compete for the market for joinery lumber with countries enjoying more favorable economic conditions, such as the Gold Coast and Nigeria.

Industrial development carried out since 1947 has enabled the French Cameroons to exploit, in the form of sawn lumber, several species other than the well-known traditional woods used for cabinet-work, and which can be utilized industrially for the manufacture of:

Rail-road ties Rail-road truck scantlings Balks for maritime work	Ekki Azobé
Tanks for storage of chemical products Tanks for dye-works General and high class joinery	Doussié Afzelia
Lumber for frames and moulding Door frames and stiles	Ilomba Pycnanthus

This present tendency can be expected to continue, and in fact to increase, in the course of the next few years. The Cameroons is a valuable reserve of timber for industrial uses and their potential qualities are not yet fully known.

To improve and increase production, LES BOIS du CAMEROUN Eseka have had drying-kilns built. This equipment furnished by the Standard Dry Kiln Cy., of Minneapolis, U.S. has a capacity of 1,000 cbm i.e. 424,000 bd. ft. per month.

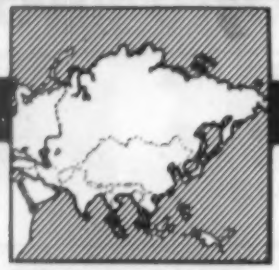
List of Plywood Producers

(Continued from Page 119)

HARDWOOD PLYWOOD

(NOTE: The following plywood mills are members of the Hardwood Plywood Institute and are among the larger mills in Eastern & Southern U.S. and Canada. For reasons of simplicity the remaining 200-odd veneer and small plywood makers are not listed here; they can be found in THE LUMBERMAN's Handbook & Directory of the Southern Forest Industries.—Editor.)

ALGOMA PLYWOOD & VENEER CO. Algoma, Wis.
(Subsidiary of U. S. Plywood Corp., Home office: 55 W. 44th St., New York City).
ATLAS PLYWOOD CORP. 20 Providence St., Boston, Mass.
(Plants: Newport, Vt.; Greenville, Me.; Goldsboro, N. C.; Gladstone, Mich.)
BRADLEY PLYWOOD CORP. Savannah, Ga.
CALYPSO VENEER CO., INC. Calypso, N. C.
COMMONWEALTH PLYWOOD CO., LTD—Ste. Therese, P. Q., Canada.
DARLINGTON VENEER CO., INC.—Darlington, S. C.
F. EGGERS PLYWOOD & VENEER CO.—Two Rivers, Wis.
FERNWOOD INDUSTRIES—Fernwood, Miss.
GEORGIA-PACIFIC PLYWOOD CO.—P. O. Box 1350, Savannah, Ga.
INTERNATIONAL FIBRE BOARD AND PLYWOOD SALES, LTD.—Gatineau, P. Q., Canada.
JASPER WOOD PRODUCTS CO., INC.—Jasper, Ind.
LARSON PLYWOOD CO.—Sheboygan, Wis.
LINWOOD, INC.—Gillett, Wis.
MCKNIGHT VENEERS, INC.—P. O. Box 415, Helena, Ark.
MEMPHIS PLYWOOD CORP.—Memphis, Tenn.
NICKEY BROTHERS, INC.—2700 Summer Avenue, Memphis, Tenn.
NORTHWESTERN VENEER & PLYWOOD CORP.—Gladstone, Mich.
(Subsidiary of Atlas Plywood Corp., Home Office: 20 Providence St., Boston, Mass.)
PERRY COUNTY PLYWOOD CORP.—Beaumont, Miss.
PICAYUNE VENEER & PLYWOOD CORP.—Picayune, Miss.
ALLEN QUIMBY VENEER CO.—Bingham, Me.
RODDIS PLYWOOD CORP.—Marshfield, Wis.
SETTER BROTHERS, INC.—Cattaraugus, N. Y.
SOUTHERN LAMINATING CO. — 1601 Clancy (Box 115), Memphis, Tenn.
SOUTHERN PLYWOODS, INC.—P. O. Box 448, Greenville, Fla.
SPLICEDWOOD CORP.—Mellen, Wis.
UNDERWOOD VENEER CO., DIV. OF CONNOR LUMBER & LAND CO.—Wausau, Wis.
UNITED STATES PLYWOOD CORP.—P. O. Box 524, Orangeburg, S. C.
VALDOSTA PLYWOODS, INC.—P. O. Box 136, Valdosta, Ga.
WEBER VENEER & PLYWOOD CO.—Shawano, Wis.
WINNSBORO PLYWOOD CO.—Winnsboro, S. C.



ASIA

THE TEAK AREA
of Southeast Asia

By
C. B. MODY

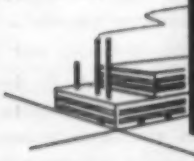
Managing Director, The Burma Teak Trading Co., Ltd., Colombo, Ceylon

Most people are aware that Teak Wood is grown in Burma, Thailand, India and Java. Before the Second World War, out of the total world production, 65% of the Teak was grown in Burma; but at present production of Teak in Burma has dwindled owing to the fact that the condition in Burma is not encouraging for working in forest due to various insurgent movements.

In 1935-36 Burma exported Teak to the extent of 242,074 tons. In 1948-49 the export of Teak fell down to only 15,954 tons which was the year when Burma had enormous insurgent troubles. In 1950-51, the export rose to 50,086 tons; but again it suffered a set back in 1951-52 viz: 35,076. In 1952-53 the export was 25,070, which was due to change in administrative method in the forest field. At present the government of Union of Burma has nationalized the industries and export of Teak from Burma can only be made through the government agency working under the style of The State Timber Board, of the Union of Burma, Rangoon.

I feel that at the moment the price of Teak is very much higher in comparison to other produce. The cost of Teak exported from Burma before the war was about $25.20 to $31.50 per ton for squares, and that of Teak conversions under 8 in. width was about $36.75 to $42 per ton. The same Teak is now costing about eight times higher. If the price of Teak will not fall in line with other building materials it will remain prohibitive for the common use for home building and furniture, etc., and I fear under the circumstances other artificial substitutes of building materials will gradually take place of Teak. For instance, since World War II we have seen a great number of new buildings where steel doors and windows have replaced Teak. In case of furniture, also, demand for steel seems to be on the increase. Besides this, hardboards of various types are also becoming competitive factors. I feel that the new set-up of Burma Teak forest industries will work vigorously so as to bring forward large tonnage of Teak for export and thus the price of Teak on an average production basis can be reduced. This, I feel, will serve to minimize the housing shortage. If the price of Teak can be reduced it may work as a real factor to bring down prices of various kinds of wood produced in the world.

Better SHEET METAL WORK



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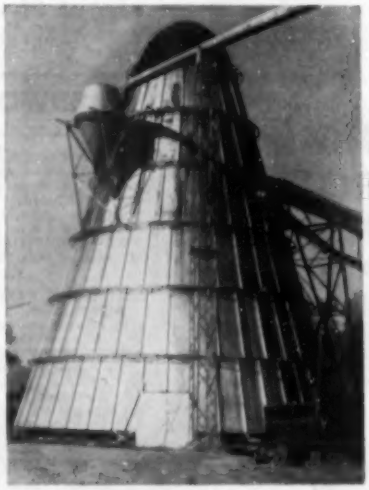

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ISRAEL

by DR. A. Y. GOOR, *Director of Forestry*

Wallboard and Hardboard Factory

The factory, located in the Jordan Valley ,is now completed except for some final adjustments in the hardboard section. The capacity of this plant is fifty tons per day and represents an investment of approximately four million dollars. Raw material now in use is Gaboon (okoumé) veneer waste from an adjacent plywood mill. This raw material supply is to be supplemented by citrus wood and locally grown eucalyptus wood *(Eucalyptus rostrata)*. The wallboard and S2S hardboard is being manufactured to meet U.S.A. Commercial Standards and will fulfill all of the local requirements with the surplus going for export.

Box Factory

There is a new box factory in Tiberius which is to be relocated on the Mediterranean coast. There is a yearly export of five million boxes of citrus fruits. To date the bulk of these boxes comes from abroad. The present box factory is importing obeche *(Triplochiton scleroxylon)* from West Africa and converting it into the finished product.

Sawmill and Plywood Factory

A small lumber mill has been established north of the old town of Acre. The present equipment consists of a French make band saw which travels on a track while the log is fixed on a platform, a rip saw, and a cut-off saw. Two men run this mill. Pine logs have been imported from the Balkan States and are sawed and air-seasoned to meet the needs of the local building trades. If the economics of this venture prove sound, additional equipment will be ordered and production expanded.

A new plywood factory has been established north of Tel Aviv. This makes the third plywood mill in the country. Phenol-formaldehyde resin glues are used in all of the factories. This factory is also equipped to make lumber core panels using automatic machinery. In addition, there is a large band saw on the site for converting poorer grades of peeler logs into lumber. The main species used are Gaboon and Lagos mahogany *(Khaya ivorensis)*.

Wood Preservation Plant

A modest wood preservation plant for posts and poles has been established at the Ilanoth Forest Experiment Station. The system utilizes a modified Boucherie treatment whereby water soluble salts, such as zinc chloride, are forced under pressure through one end of the stem. A retention of over one pound per cubic foot of dry salt is obtained throughout the length of a telephone pole in less than two hours. In the past year over 50,000 posts have been treated as well as one thousand poles. Locally grown eucalyptus is the main species used.

PHILIPPINES

By HENRY S. THOMPSON

President, Insular Lumber Co. Head Office, Philadelphia, Pa.

The supply of Philippine Mahogany in 1953 was not up to the United States demand due primarily to a shift on the part of many Philippine producers from export lumber production to the export of logs. Poor prices in the local Philippine market for low grade lumber

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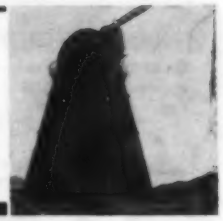

was the primary reason for this shift of business. Consequently stocks of Philippine Mahogany in this country have been low and importers in general have not been able to meet United States market demands.

The importers, thru their trade group the Philippine Mahogany Association, are working with the Philippine Lumber Producers' Association to develop methods whereby the Philippine export lumber production can be substantially increased. The Philippine woods are in a strong market position with a constantly increasing range of uses, so that at least for the immediate future the market could absorb quite a bit more volume than has been forthcoming in recent months. While it may hence be difficult to obtain Philippine Mahogany for the present, it is believed that the long term future outlook is for steady improvement in the ability of the Philippine lumber industry to manufacture for export.

The year 1954 marks the Fiftieth Anniversary of the Insular Lumber Company's operations in the Philippines—a record which is not matched by many so far as tropical hardwoods are concerned. This anniversary will be fittingly recognized by the completion in the first part of this year of a new and modern double band mill at the site of the Company's operations—Fabrica, Occidental Negros.

Engineered by W. H. Rambo of Portland, Ore., this new mill will be the finest in the Orient, incorporating many special features based on "ILCO" 's long experience in Philippine operations. Also planned for the current year is the construction of a new export lumber storage shed with an eighty foot span overhead PH bridge crane. With these facilities, Insular Lumber Co. looks forward to increased ability to supply its world wide distributors and to keep the reputation of its products at the highest possible level.

New Sawmill of 120 M Capacity

(Note: The following report on Bislig Bay Lumber Co., one of the larger sawmilling operations in the Philippines, was made recently to THE LUMBERMAN by Mr. A. S. Garcia, General Partner of the American Philippine Hardwood Co. of San Francisco, American representatives. A full story on the logging and sawmill of the Bislig Bay Lumber Co. is scheduled for the April 1954 edition of THE LUMBERMAN.—Editor.)

Another up-to-date lumber development in the Philippines is that of the Bislig Bay Lumber Co., located on Mindanao Island. Modernization of logging and lumber production facilities over a three-year period has resulted in the completion of a new sawmill (Filer-Stowell) which was designed by Joe Denton, chief engineer for Filer-Stowell in the U. S. The capacity of the new mill is 120,000 board feet daily.

Bislig operates on a timber concession granted by the Philippine government. Allowable annual cut is 101,000,000 board feet, which is equivalent to the annual growth on the area under grant.

The first shipment of logs to Japan was made early in 1951. The right hand side of the Filer and Stowell mill was erected in a temporary building in June of 1951, and regular shipments of cants and lumber were started for U. S. markets.

With the availability of the various new facilities, Bislig Bay will be able to market in excess of three million feet of Philippine mahogany each month. Over half the amount is of the grades normally required by U. S. consumers. The quality of virgin timber available will last for fifty years.

Credit and Acknowledgement

The introductory photograph in the Plywood Section of this Annual Review Number, appearing on Page 99, was taken at the Oregon-Washington Plywood Co., Garibaldi, Oregon, by Richards Studio, Tacoma, Wash.

THE LUMBERMAN expresses its appreciation for the fine cooperation extended by many forest industries trade groups and by numerous individuals for information and statistics they have supplied.

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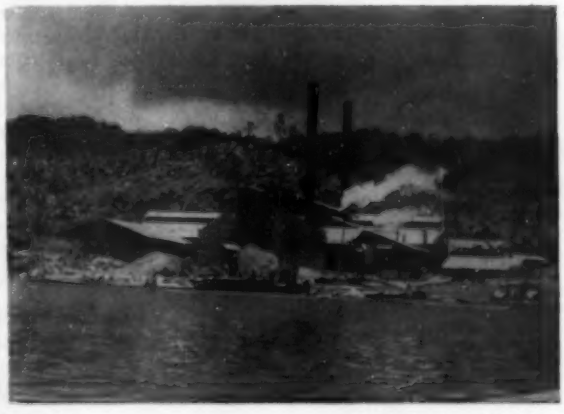

BELOW—VIEW OF BISLIG Bay Lumber Company's sawmill and power house (photo taken from banca in Bislig Bay) on the Island of Mindanao in the Philippines. Three years were spent in bringing this operation right up to date.

U. S. ASSOCIATIONS

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949 Henry Bldg., Seattle, Wash.
Pres.—A. J. Sandoz; Sec.-Mgr.—C. S. Cowan

ALABAMA FOREST PRODUCTS ASSOCIATION
209-210 Shepherd Bldg., Box 422, Montgomery
Pres.—Leon Clancy
Exec. Vice Pres.—E. E. Hale

AMERICAN FOREST PRODUCTS INDUSTRIES, INC.
1816 N Street N. W., Washington 6, D. C.
Pres.—Leonard G. Carpenter
Mng. Dir.—Charles A. Gillett
Meeting—Late Oct. or early Nov.

AMERICAN FORESTRY ASSOCIATION
Pres.—Don P. Johnston
Exec. Dir.-Forester—Lowell Besley
Meeting—Multnomah Hotel, Portland, Ore., Sept. 6-9.

AMERICAN INSTITUTE OF TIMBER CONSTRUCTION

WARD MAYER

FRANK J. HANRAHAN

1757 K Street N. W., Washington 6, D. C.
Pres.—Ward Mayer
Exec. Vice. Pres.—Frank J. Hanrahan
Meeting—March 29-April 2, 1954, New Orleans

AMERICAN PULPWOOD ASSOCIATION
220 E. 42nd St., New York 17
Exec. Secy.—W. S. Bromley
Meeting—February

AMERICAN TURPENTINE FARMERS ASSOC.
108 W. Hill, Valdosta, Ga.
Pres. & Gen. Mgr.—Harley Langdale
Meeting—April 20-21, '54, Valdosta

AMERICAN WALNUT MANUFACTURERS ASSOC.
666 N. Lake Shore Dr., Chicago 11, Ill.
Pres.—Louis Vonderbrink;
Sec.-Mgr.—C. H. White
Meeting—French Lick Springs, Ind., May 14-15

AMERICAN WOOD-PRESERVERS' ASSOC.
839 17th St. N. W., Washington 6, D. C.
Pres.—P. D. Brentlinger
Sec.-Treas.—W. A. Penrose
Meeting—April 26-28, '54, Atlantic City.

APPALACHIAN HARDWOOD MANUFACTURERS, INC.
414 Walnut St., Cincinnati 2, Ill.
Pres.—J. P. Hamer
Sec.-Treas.—C. H. Clendening
Meeting—July 22-23, Roanoke, Va.; Jan. 20-21, 1955, Netherlands Plaza, Cincinnati, O.

ARKANSAS WOOD PRODUCTS ASSOC.
4109 Lee Ave., Little Rock, Ark.
Pres.—W. E. Tiller
Exec. Sec.—Murray B. McLeod

ASSOC. COOPERAGE INDUSTRIES OF AMERICA
408 Olive, St. Louis 2, Mo.
Pres.—George T. McCall
Exec. Dir.—F. P. Hankerson
Meeting—May 17-19, Chase hotel, St. Louis.

ASSOC. OF NORTHERN CALIFORNIA LOGGERS
Box 552, Arcata, Calif.
Pres.—R. I. Wheeler
Sec.-Mgr.—Carl Anderson

CALIFORNIA FOREST PROTECTIVE ASSOC.
681 Market St., San Francisco 5.
Pres.—A. B. Hood
Secy.-Mgr.—W. R. Schofield
Meeting—January 21, 1955

CALIFORNIA REDWOOD ASSOCIATION
576 Sacramento St.
San Francisco 11, Calif.
Pres.—Earl B. Birmingham
Gen. Mgr.—Philip T. Farnsworth

CALIFORNIA SAWMILL CLUB
c/o Lee Moffett, Pres., Stockton Box Co., P.O. Box 1731, Stockton, Calif.

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1710 16th St., N. W., Wash. 9, D. C.
Pres.—Gerald P. Nye; Sec'y.—C. C. Case

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U. S. Bank Bldg., Portland, Ore.
Pres.—R. L. Ford; Mgr.—Gus N. Arneson
Branch office: W. 7th & Almaden, Eugene, Ore., Henry A. DuPuis, district supervisor

DOUGLAS FIR EXPORT COMPANY
Yeon Bldg., Portland, Ore.
Pres.—D. H. Miller; Mgr.—D. C. Moore

COLUMBIA BASIN LOGGERS—COLUMBIA BASIN SAWMILLS

602 Portland Trust Bldg., Portland, Ore.
President (Loggers)—Ed Baker
President (Sawmills)—G. C. Wilkinson
Manager—(both)—H. Crosby

G. C. WILKINSON

DOUGLAS FIR PLYWOOD ASSOCIATION

S. EBERLY THOMPSON

W. E. DIFFORD

119 A St., Tacoma 2, Wash.
Pres.—S. Eberly Thompson
Mng. Dir.—W. E. Difford
Meeting—June 7, 8, '54.

DRY KILN CLUBS
Rockford: H. R. Carlson, pres., 1316 Widergren Dr., Rockford, Ill.
Central Calif.: H. H. Smith, sec.-treas., Box 245, Berkeley 1, Calif.
So. Ore.-No. Calif.—Orland Lynch, sec., c/o Weyerhaeuser, Klamath Falls, Ore.
Redwood Seasoning Comm.—Dale Eichar, sec., c/o Geneva Lbr. Co., Orick, Calif.
Southeastern: Roy Carter, sec., N. C. State Coll., Raleigh, N. C.
New England Kiln Drying Assn.—Harry Rich, sec., U. of Mass., Amherst, Mass.
E. Ore.-So. Idaho—Chas. Wright, sec., Bates, Ore.
Wash.-Ida.-Montana—E. J. Gondek, sec.-treas., Kalispell Lbr. Co., Kalispell, Montana
So. Cal. Lbr. Seasoning Assoc.—Herbert Geisenheyner, sec.-treas., Box 124, Vernon 58, Calif.
Texas—E. D. Marshall, sec.-treas., 541 Humason Ave., Lufkin, Texas
Kokstone: Wm. Nearn, sec.-treas., Forestry Dept., Penn. St. Coll., State College, Pa.
West Coast: sec.—Paul A. Loris, Box 188, Springfield, Ore.

FIR DOOR INSTITUTE
Rust Bldg., Tacoma, Wash.
Pres.—A. C. Paterson
Mng. Dir.—James F. Fowler
Meeting—May.

FINE HARDWOODS ASSOCIATION
(Formerly the Veneer Assoc.)
666 Lake Shore Drive, Chicago, Illinois
Pres.—J. T. Mengel
Exec. V. P.—Burdett Green

J. T. MENGEL

FOREST FARMERS ASSOC.
66 11th N. E.; Box 7284 Sta. "C"; Atlanta, Ga.
Pres.—J. V. Whitfield
Exec. Sec.—J. Walter Myers, Jr.
Meeting—April 26-27, '54, Asheville, N. C.

FOREST PRODUCTS RESEARCH SOCIETY
Box 2010, Univ. Sta., Madison 5, Wis.
Pres.—Robert D. Pauley
Exec. Sec.—Frank J. Ravsek
Meeting—May 5-7, Grand Rapids, Mich.

ROBERT D. PAULEY

FOREST PRODUCTS SAFETY CONFERENCE
c/o R. M. Gilmore, Pres.
Rayonier, Inc.
Hoquiam, Wash.
Meeting—May 20-21, Seattle

GRAYS HARBOR LOG SCALING & GRADING BUREAU
105 Finch Bldg., Aberdeen, Wash.
Pres.—R. D. Mackie; Sec.-Treas.—C. C. Rose
Meeting—Feb. in home office

HARDBOARD ASSOCIATION

HAROLD A. MILLER

DONALD LINVILLE

30 N. La Salle St., Chicago 2, Ill.
Pres.—Harold A. Miller
Exec. Sec'y.—Donald Linville
Meeting—Nov. '54, Chicago.

HARDWOOD DIMENSION MANUFACTURERS ASSOC.
218 Bdwy. Nat'l Bk. Bldg., Nashville 3, Tenn.
Pres. — George M. Rozzell
Mng. Dir.—J. Edgar Kennedy
Meeting—late Jan.

GEORGE M. ROZZELL

U. S. ASSOCIATIONS

HARDWOOD PLYWOOD INSTITUTE
600 S. Michigan Ave., Chicago, Ill.
Mng. Dir.—Charles E. Close

INDIANA HARDWOOD LUMBERMEN'S ASSOCIATION
Room 319, Hart. Bldg., Lafayette, Ind.
Pres.—Donald S. Mattson
Sec.-Treas.—Roy C. Brundage

INDUSTRIAL FORESTRY ASSOCIATION

ROY F. MORSE

W. D. HAGENSTEIN

1410 S. W. Morrison St., Portland, Ore.
Chairman—Roy F. Morse
Forest Engr.—W. D. Hagenstein
Meeting—March 26, 1954, Portland.

INTERMOUNTAIN LOGGING CONFERENCE

Kalispell, Mont.
Pres.—Richard Moltke
Sec'y.-Mgr.—Chas. P. Keim
Meeting—March 25-27, 1954, Spokane, Wash.

RICHARD MOLTKE

KETCHIKAN INDEPENDENT LOGGERS ASSOCIATION
Ketchikan, Alaska
Pres.—Art Almquist

LOUISIANA FORESTRY ASSOCIATION
Pres.—R. H. Crosby, Crosby Chemicals
De Ridder, La.

MAHOGANY ASSOCIATION, INC.
666 N. Lake Shore Dr., Chicago 1, Ill.
Pres.—Harry A. Freiberg, Jr.
Exec. Sec.—Geo. N. Lamb

MAPLE FLOORING MANUFACTURERS ASSOC.

35 E. Wacker Dr.
Chicago 1, Ill.
Pres.—D. S. DeWitt
Sec.-Mgr.—L. M. Clady
Meeting—Last week in Jan.

D. S. DeWITT

MILLWORK COST BUREAU
220 S. State, Chicago 4
Pres.—Elmer W. Root; Sec.—O. L. Appleton

MISSISSIPPI FORESTRY AND CHEMURGIC ASSOCIATION
311-312 Millsaps Bldg., Jackson
Pres.—John W. Squires
Exec. Sec.—Frank B. Pittman
Meeting—Tentatively 2d wk. Oct., Edwards Hotel, Jackson

MONTANA LUMBER MANUFACTURERS ASSOCIATION
Box 394, Kalispell
Pres.—G. A. Miller; Sec.—Maurice Boorman
Meetings: annual—Feb.; & on pres.' call

NATIONAL FOREST INDUSTRIES COMMUNICATIONS
10 East 18th Ave., Eugene, Ore.
Chmn. Exec. Comm—Robt. Olin
Mgr.—Elmer Surdam
Meeting—to be scheduled

NATIONAL HARDWOOD LUMBER ASSOCIATION

59 East Van Buren, Chicago 5
Pres.—Harry D. Gaines
Sec.-Mgr.—Joseph L. Muller
Meeting — Oct. 4-7, '54, Rice hotel, Houston.

HARRY G. GAINES

NATIONAL LUMBER MANUFACTURER'S ASSOCIATION
1319 18th St., N. W., Wash. 6, D. C.
Pres.—James R. Bemis
Exec. Sec'y.—Leo V. Bodine
Meeting—Nov. 8-10, '54, Shoreham Hotel, Wash., D. C.;
Spring meeting—May 10-11, '54, Davenport Hotel, Spokane, Wash.

NATIONAL OAK FLOORING MANUFACTURERS' ASSOC.
814 Sterick Bldg., Memphis 3, Tenn.
Pres.—T. C. Matthews
Sec.-Treas.—Henry H. Willins
Meeting—Dec. 7-8, Hotel Peabody, Memphis

NATIONAL WOODEN BOX ASSOC.
Barr Bldg., Washington 6, D. C.
Pres.—Curt F. Setzer
Exec. V. P.—C. D. Hudson
Pacific Division: 55 New Montgomery, San Francisco

NATIONAL WOODWORK MANUFACTURERS ASSOC.
332 S. Michigan, Chicago, Ill.
Pres.—L. C. Paisley; Sec.-Mgr.—O. C. Lance
Wash, D. C., branch—DuPont Circle Bldg.

NORTH IDAHO FORESTRY ASSOCIATION
Lewiston, Idaho
Pres.—L. J. Davis
Sec.-Treas.—Geo. W. Beardmore
Meeting—2nd Mon., March.

NORTHEASTERN LOGGERS' ASSOC., INC.
Old Forge, N. Y.
Pres.—John R. Curry; Sec.—J. E. Davis

NORTHEASTERN LUMBER MANUFACTURERS ASSOC.
271 Madison Ave., New York 16, N. Y.
Pres.—R. J. Gustafson
Exec. Sec.—R. E. Broderick

NORTHERN MONTANA FORESTRY ASSOCIATION
Kalispell, Montana

NORTHERN HEMLOCK & HARDWOOD MANUFACTURERS ASSOCIATION
Oshkosh, Wis.
Pres.—R. W. Lyons; Sec'y.-Mgr.—O. T. Swan

NORTHERN PINE MANUFACTURERS ASSOCIATION
4329 Oakland Ave., Minneapolis, Minn.
Pres.—J. A. Mathieu; Sec.—W. A. Ellinger
Meeting—Tentatively May 11, 1954.

NORTHWEST WOOD PRODUCTS CLINIC
P. O. Box 684, Spokane, Wash.
Pres.—M. J. Huetter
Sec'y.-Treas.—R. O. Batdorf
Meeting—April 20-21, 1954, Davenport hotel, Spokane.

NORTHWESTERN CALIFORNIA LUMBERMEN'S CLUB
Box 524, Eureka, Calif.
Pres.—Robert Halvorsen
Sec.-Treas.—Charles J. Murray

NORTHWESTERN LUMBERMEN'S ASSOCIATION
1013 Fourth Ave. S., Minneapolis 4, Minn.
Pres.—D. B. Taylor; Sec.—W. H. Badeaux

OKLAHOMA LUMBERMEN'S ASSOC.
Leonhardt Bldg., Oklahoma City, Okla.
Pres.—Virge Steger
Sec.-Mgr.—W. M. "Bill" Morgan

OLYMPIC LOGGING CONFERENCE

Port Angeles, Wash.
Pres.—Elmer Critchfield
Sec.-Treas — Walter Fontaine
Meeting — Harrison Hot Springs, B. C., April 8-9, 1954.

ELMER CRITCHFIELD

OREGON COAST OPERATORS
175 No. Second St., Coos Bay, Ore.
Pres.—A. N. Denman
Sec.-Mgr.—C. S. Hoffman

OREGON FOREST FIRE ASSOC.
U. S. Natl. Bk. Bldg., Portland
Sec.-Treas.—Carl V. Hersey

OREGON TIMBER TRANSPORT OPERATORS
American Bk. Bldg., Portland

PACIFIC FOREST INDUSTRIES
Plywood Exporters
Washington Bldg., Tacoma 2, Wash.
Pres.—Arnold Koutanen
Mng. Dir.—H. C. Reif

PACIFIC LUMBER INSPECTION BUREAU, INC.
White-Henry-Stuart Bldg., Seattle, Wash.
Pres.—M. A. Whitman
Sec.-Mgr.—Harry W. Murphy
Meeting—April
Branch offices: Vancouver, B. C.; Tacoma, Aberdeen, Longview, Wash.; Portland, Roseburg, Coos Bay, Ore.

PACIFIC LOGGING CONGRESS

ROY GOULD

CARWIN WOOLLEY

1222 Amer. Bk. Bldg., Portland 5, Ore.
Pres.—Roy Gould; Sec.—Carwin A. Woolley
Meeting—Portland, Oct. 25-27, 1954.

PACIFIC NORTHWEST LOGGERS ASSOC.
Stuart Bldg., Seattle, Wash.
Pres.—A. H. Brandis; Sec.-Mgr.—E. T. Clark
Meeting—January

PHILIPPINE LUMBER PRODUCERS' ASSOCIATION, INC.
Room 307 El Hogar Filipino Bldg.
P. O. Box 2145, Manila, Philippines
Pres.—Hon. A. de los Alas
Secy.-Treas.—Pacifico de Ocampo

U. S. ASSOCIATIONS

A. de las ALAS

PACIFICO de OCAMPO

PHILIPPINE MAHOGANY ASSOC., INC.
111 W. 7th., Los Angeles, Calif.
Pres.—Walter G. Scrim
Sec.-Treas.—George D. Scrim
Meeting—July 6-10, '54, Portsmouth, N. H.

PLYWOOD RESEARCH FOUNDATION

620 East 26th St., Tacoma 4, Wash.
President—E. W. Daniels
Executive Director—H. R. Evans
Meeting—September.

H. R. EVANS

PONDEROSA PINE WOODWORK
38 South Dearborn, Chicago, Ill.
Pres.—F. A. Hoerner
Gen. Mgr.—R. H. Morris

PUGET SOUND LOG SCALING & GRADING BUREAU
529 Perkins Bldg., Tacoma 2, Wash.
Pres.—J. E. Harley; Mgr.—B. J. Demers
Meeting—2d Tues., June, Seattle

RAINIER FOREST ASSOC.
949 Henry Bldg., Seattle, Wash.
Field Hq.—Elbe, Wash.
Pres.—Clyde S. Martin
Sec.-Treas.—C. S. Cowan
Meeting—March 23, 1954, Tacoma

RED CEDAR SHINGLE BUREAU
5510 White Bldg., Seattle, Wash.
Pres.—Earl Wasser
Sec.-Mgr.—Virgil Paterson
Meeting—Early December

REDWOOD REGION LOGGING CONFERENCE

243 Forestry Bldg., Campus
Berkeley 4, Calif.
Pres.—Gray G. Evans
Sec.-Mgr. — Prof. Emanuel Fritz
Meeting—Ukiah, Calif., May 21-22

GRAY G. EVANS

SIERRA-CASCADE LOGGING CONFERENCE

3535 Las Posas Way, Sacramento 19, Calif.
Pres.—W. S. Wickstrom
Sec.-Treas. — Jack Berry
Meeting — Probably Feb., '55.

W. S. WICKSTROM

ROOFER MANUFACTURERS' ASSOC.
Box 1373, Columbus, Ga.

ROOSEVELT LAKE LOG OWNERS ASSOCIATION
603 Hyde Bldg., Spokane 8, Wash.
Pres.—M. Gale Beals
Sec.-Mgr.—George J. Tichy

SOCIETY OF AMERICAN FORESTERS

17 & Pennsylvania, N. W.
Mills Bldg., Washington, D. C.
Pres. — Elwood L. Demmon
Exec.-Sec. — Henry Clepper
Meeting—Oct. 24-27, Hotel Schroeder, Milwaukee.

E. L. DEMMON

SOUTHEASTERN LUMBERMEN'S CLUB
P. O. Box 448, Jacksonville 1, Fla.
Pres.—T. B. King; Sec.—Ethelind McCarthy
Meets several times during year.

SOUTHERN CALIFORNIA DOOR INSTITUTE
2430 N. Chico Ave., El Monte, Calif.

SOUTHERN CYPRESS MANUFACTURERS' ASSOC.
507 Barnett Bk. Bldg., Jacksonville, Fla.
Pres.—Edward C. Roe
Sec.-Mgr.—J. A. Prestridge
Meeting—Tentatively May 21.

SOUTHERN FURNITURE MANUFACTURERS ASSOC.
High Point, N. C.
Pres.—S. H. Millender
Exec. V. P.—James T. Ryan

SOUTHERN HARDWOOD PRODUCERS, INC.
Sterick Bldg., Memphis 3, Tenn.
Pres.—C. R. Ransom
Sec.-Mgr.—L. J. Heatherly
Meeting—Mar. 4-5, '54, New Orleans.

SOUTHERN HARDWOOD TRAFFIC ASSOC.
Commerce Title Bldg., Memphis 1, Tenn.
(Dist. Offices: Louisville, New Orleans, Helena, Ark., Knoxville.)
Sec.-Mgr.—C. A. Haw
Meeting—Late March.

SOUTHERN OREGON CONSERVATION & TREE FARM ASSOC.
Goldy Bldg., Medford, Ore.
Pres.—Jack Crump
Sec.-Mgr.—Lewis L. Simpson
Meeting—Early spring.

SOUTHERN PINE ASSOCIATION
Natl. Bk. Comm. Bldg., New Orleans, La.
Pres.—James R. Bemis
Exec. V. P.—H. C. Berckes
Meeting—New Orleans, April 5-7, 1954.

SOUTHERN PINE INSPECTION BUREAU
Canal Bldg., New Orleans 4, La.
Pres.—B. A. Mayhew
Sec.-Mgr.—A. S. Boisfontaine
Meeting—April 7, '54, New Orleans.

SOUTHERN PULPWOOD CONSERVATION ASSOC.
1224 Peachtree St. N. E., Atlanta 5, Ga.
Pres.—R. V. Miles
Forester & Gen. Mgr.—H. J. Malsberger

SOUTHERN WOODWORK ASSOC.
1050 Ponce de Leon Ave. N. E., Atlanta, Ga.
Pres.—M. D. Ebert; Counselor—Jos. G. Rowell
Meeting—May 20-21, Shoreham Hotel, Wash., D. C.

STAINED SHINGLE & SHAKE ASSOC.
4403 White Bldg., Seattle 1, Wash.

TACOMA LUMBERMEN'S CLUB
P. O. Box 757, Tacoma, Wash.
Pres.—Wm. R. Garnett
Exec. Sec.—D. B. Hartman
Meeting—December, Tacoma.

TEXAS FORESTRY ASSOCIATION
P. O. Box 1032, Lufkin, Texas
Pres.—W. A. Weems
Exec. Sec.—Bruce Stewart
Meeting—Usually Dec. in Lufkin.

TEXAS LUMBER MFRS. ASSOC.
Box 58, Lufkin, Texas
Pres.—Clyde Thompson
Sec.-Treas.—Al. E. Cudlipp
Meeting—May 8, '54, Lufkin.

TIMBER PRODUCTS MANUFACTURERS ASSOC.
721 W. Second, Spokane, Wash.
Pres.—Harry G. Preston
Mgr.—George J. Tichy
Branch Office: S. 801 5th, Missoula, Mont.
D. L. Bright, field rep. & asst. mgr.

U. S. RED CEDAR SHINGLE INDUSTRY
6623 White Bldg., Seattle 1, Wash.
Pres.—R. D. Mackie
Sec.-Mgr.—D. M. Williams
Meeting—February.

WASHINGTON FOREST FIRE ASSOC.
949 Henry Bldg., Seattle, Wash.
Pres.—Martin N. Deggeller
Mgr.—C. S. Cowan
Meeting—April 6, Seattle.

WASHINGTON STATE FORESTRY CONFERENCE
949 Henry Bldg., Seattle, Wash.
Pres.—Dean Gordon Marckworth
Sec.-Treas.—C. S. Cowan
Meeting—Nov. 5, 1954, Seattle.

WEST COAST LUMBERMEN'S ASSOCIATION
1410 S. W. Morrison St., Portland, Ore.
Branch Offices: White-Henry-Stuart Bldg., Seattle, Wash.; 170 Eleventh Ave., E., Eugene, Ore.; 23 Goldy Bldg., Medford, Ore.; Room 400, Statler Center, Los Angeles; 1625 Eye St., N. W., Washington 6, D. C.
Pres.—G. E. Karlen
Exec. V. P.—H. V. Simpson
Meeting—Mar. 24-25, 1954, Portland.

WESTERN FOREST INDUSTRIES ASSOC.
316 Henry Bldg., Portland 4, Ore.
Pres.—Ed. Kellenberger
Vice Pres.—R. T. Titus

WESTERN FORESTRY & CONSERVATION ASSOC.

JOHN ARAM

STUART MOIR

U. S. Natl. Bk. Bldg., Portland, Ore.
Pres.—John Arem
Forest counsel—Stuart Mair
Meeting—San Francisco, Dec. 7-10, '54, Fairmont Hotel.

WESTERN PINE ASSOCIATION
Yeon Bldg., Portland 4, Ore.
Pres.—U. R. Armstrong
Sec.-Mgr.—S. V. Fullaway, Jr.
Meeting—March.

WESTERN WOOD-PRESERVING OPERATORS' ASSOC.
370 Pittock Block, Portland 5, Ore.
Pres.—Paul D. Christerson

U.S. CANADIAN ASSOCIATIONS

WILLAMETTE VALLEY LOGGING CONF.

Osborn Hotel, Eugene, Ore.
Pres.—John Rhule
Sec.—A. D. McReynolds
Meeting—April 29-May 1, 1954, Eugene.

JOHN RHULE

WILLAMETTE VALLEY LUMBERMEN'S ASSOC.

Box 248, Springfield, Ore.
Pres.—Vois Hult; Sec.-Treas.—Eliot Jenkins

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Sec.—E. DeMatt Henderson

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St. Louis 8, Mo.
Pres.—B. C Varner
Sec.—Mgr.—G. R. Gloor

B. C. VARNER

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New York 17, N. Y.
Pres.—Ray M. Janin
Sec.—Directing Manager—Sid L. Darling
Western Manager—Paul C. Stevens, Yeon Bldg., Portland 4, Ore.
Meeting—May 3-5, Edgewater Bch. Hotel, Chicago

ROY M. JANIN

NATIONAL RETAIL LUMBER DEALERS ASSOCIATION

Suite 302, King Bldg., 18th & M, N. W.
Washington 6, D. C.
Pres.—Henry J. Munnerlyn
Exec. V. P.—H. R. Northrup
Meetings—Spring: May 16-20, 1954, Wash., D. C.; Annual—Oct. 17-21, 1954, White Sulphur Springs, W. Va.

HENRY J. MUNNERLYN

PACIFIC COAST WHOLESALE HARDWOOD DISTRIBUTORS' ASSOC.

Ray & Mason Sts.
San Francisco, Calif.
Sec.—James Davis, Davis Hardwood Co.

SOUTHERN SASH & DOOR JOBBERS ASSOC.

920 Sterick Bldg.
Memphis, Tenn.
Pres.—W. Horace Woods
Sec.-Treas.—Barney Gallagher
Meetings—June 7-9, Peabody Hotel, Memphis; Nov. 30-Dec. 2, Roos. Hotel, New Orleans.

SOUTHERN WHOLESALE LUMBER ASSOCIATION

McMillan Bk. Bldg.
Livingston, Alabama
Pres.—Harry L. DeMuth
Sec.-Mgr.—Robert F. Darrah
Meeting—Prob. May, 1954

Directory of Canadian Trade Organizations

B. C. COAST WOODS TRADE EXTENSION BUREAU

810 Hastings St. W., Vancouver, B. C.
Mgr.—Cleve Edgett

BRITISH COLUMBIA LOGGERS' ASSOCIATION

1518 Standard Bldg., Vancouver 2, B. C.
Bd. Chmn.—J. S. Johannson
Sec.-Mgr.—John N. Burke
Meeting—Mar. 25, 1954

BRITISH COLUMBIA LUMBER MANUFACTURERS ASSOC.

810 W. Hastings St., Vancouver 1, B. C.
Pres.—A. D. Anderson
Exec. V.-P.—L. R. Andrews
Met on Mar. 16, 1954

B. C. LUMBER SURVEY LTD.

1490 W. Broadway, Vancouver, B. C.
Pres.—A. W. Dixon
Sec-Mgr.—W. J. Andrew
Meeting—Mid-Jan., 1955

CANADIAN FORESTRY ASSOC.

4795 St. Catherine St. W., Montreal 6, Canada
Pres.—Wallace A. Delahey
Gen. Mgr.—J. L. Van Camp
Meeting—February, 1955, Ottawa

CANADIAN INSTITUTE OF FORESTRY

110 Manor Road, Toronto, Ontario
Sec.—D. V. Love

CANADIAN INSTITUTE OF TIMBER CONSTRUCTION

Pres.—D. D. Miller, Laminated Structures, Montreal
Secy.-Treas. — W. Nicholson, Burlington, Ontario

CANADIAN LUMBERMEN'S ASSOC.

Timberhouse, 27 Goulbourn Ave., Ottawa, Canada
Pres.—K. O. Roos
Sec.-Mgr.—W. J. LeClair

CANADIAN PULP AND PAPER ASSOC., WOODLANDS SECTION

2280 Sun Life Bldg., Montreal 2
Pres.—R. M. Fowler
Gen. Mgr.—F. L. Mitchell
Meeting — Late Jan., Woodlands Section, Mar. 24-26

CONSOLIDATED RED CEDAR SHINGLE ASSOCIATION OF B. C.

425 Howe St., Vancouver 1, B. C.

EASTERN ONTARIO RETAIL LUMBER DEALERS' ASSOC.

Almonte, Ont.; Sec.-Treas.—Geo. E. Gomme

INTERIOR BOX MANUFACTURERS ASSOCIATION

Marine Bldg., Vancouver, B. C.

INTERIOR LUMBER MANUFACTURERS ASSOCIATION

608 Marine Bldg., Vancouver 1, B. C.
Pres.—Harvey A. McDiarmid
Sec.-Mgr. — L. J. A. Rees
Meeting—Late Winter 1955

HARVEY McDIARMID

MARITIME LUMBER BUREAU

Box 189, Amherst, Nova Scotia
Pres.—Colin Mackay
Sec.-Mgr.—A. F. Byers
Meeting—May 28, 1954, Amherst

NATIONAL RETAIL LUMBERMEN'S COUNCIL OF CANADA

1490 W. Broadway, Vancouver 9, B. C.
Pres.—L. C. Thomas
Sec.-Mgr.—W. J. Andrew

NEW BRUNSWICK FOREST PRODUCTS ASSOC.

Milford Station, Nova Scotia

NORTHERN INTERIOR LUMBERMEN'S ASSOCIATION

Prince George, B. C.
Pres.—Theodor Schmitt
Sec.-Mgr.—R. J. Gallagher
Meeting—May, 1954, Prince George

NORTHWESTERN ONTARIO TIMBER OPERATORS' ASSOC.

Room 3, Tomlinson Bldg., Port Arthur, Ont.
Pres.—H. H. Styffe; Mgr.—T. S. Jones
Meeting—Jan. 14, 1955, Port Arthur

ONTARIO FORESTRIES INDUSTRIES ASSOCIATION

159 Bay St., Toronto, Ontario
Pres.—C. B. Davis; Mgr.—C. R. Mills
Meeting—Jan. 25, 1955
Branch: Pt. Arthur, Ont.

PLYWOOD MANUFACTURERS ASSOCIATION OF B. C.

810 W. Hastings St., Vancouver 1, B. C.
Pres.—G. H. Tullidge
Mgr.—J. B. Armstrong
Meeting—Probably March

QUEBEC FOREST INDUSTRIES ASSOC.

65 St. Anne St., Quebec
Pres.—J. V. Perrin; Mgr.—Edgar Porter
Meeting—Jan. 19, 1955

TRUCK LOGGERS ASSOCIATION

410-207 W. Hastings St., Vancouver, B. C.

VANCOUVER MILLWORK MANUFACTURERS ASSOC.

3032 Main St., Vancouver 10, B. C.

WHOLESALE LUMBER DEALERS' ASSOC., INC.

2487 Bloor St., Toronto, Ont.
Sec.-Treas.—W. Walter Watt

(NOTE: While the above list is believed to include all the major national organizations and most of the regional ones, please notify the Editor of THE LUMBERMAN if your trade organization does not appear in this listing.)

AIR CONTROL VALVES
Valvair Corp., Akron, Ohio

AIR MOTORS
The Eimco Corp., Salt Lake City, Portland, Vancouver, B. C., Brampton, Ontario,

AIR VALVES
Valvair Corp., Akron, Ohio

ALUMINUM PIKE POLES
Alloy Welding & Fabricating Co., Portland, Ore.

APPRAISALS
General Appraisal Co., Seattle, Portland, San Francisco

ARCHES
Hyster Company, Portland, Ore

AXLES
Eaton Manufacturing Co., Cleveland, Ohio
Kay-Brunner Steel Products Co., Alhambra, Calif.
Timken-Detroit Axle Co., Detroit
Roberts Motor Co., Portland

BEARINGS
Dodge Manufacturing Co., Mishawaka, Ind., San Francisco, Portland, Seattle
Link-Belt Co., Seattle, Portland, San Francisco
J. W. Minder Chain & Gear Co., Portland, Los Angeles
Zweifel, Geo. E., Portland

BELTING AND PACKING
Gates Rubber Co., Denver, Colo.
Goodyear Rubber & Asbestos Co,. Portland, Ore.
Goodyear Tire & Rubber Co., Akron, Ohio
Graton & Knight Co., Worcester, Mass.
Peat Belting & Supply Company, Seattle
Raybestos-Manhattan, Inc., Passaic, N. J.; Portland, Seattle
Scougal Rubber Mfg. Co., Seattle

BLOWPIPE SYSTEMS
American Sheet Metal Works, Portland
Anderson Blowpipe & Mfg. Co., Seattle
Rees Blow Pipe Mfg. Co., San Francisco, Cal.

BLUE PRINTING
Chas. Bruning Co., Inc.

BOATS—All Kinds
L. S. Baier & Associates, Portland, Ore.
Ilwaco Boat Works, Ilwaco, Wash.

BOILERS AND ACCESSORIES
Gabriel Fabrication & Erection Co., Portland, Ore.
Seattle Boiler Works, Seattle

BOOM BOATS
L. S. Baier & Associates, Portland, Ore.
Evinrude Outboard Motors, Milwaukee, Wis.
Ilwaco Boat Works, Ilwaco, Wash.
Johnson Motors, Waukegan, Illinois

BRAKE BLOCKS AND LININGS
American Brake Shoe Co., Detroit, Mich., Los Angeles, Calif., Portland, Ore., Seattle, Wash.
Champion Friction Co., Eugene, Ore.
World Bestos, Newcastle, Ind.

BRAKE DRUMS
Gunite Foundries Corp., Rockford, Ill., Portland, Ore., Seattle, Wash., Vancouver, B.C.

BULLDOZERS
Caterpillar Tractor Co., Peoria, Ill.
Howard-Cooper Corp., Portland, Seattle
Kay-Brunner Steel, Inc., Los Angeles

CASTINGS—Iron, Steel and Brass
Electric Steel Foundry, Portland
Link-Belt Co., Seattle, Portland, San Francisco
Vulcan Steel Foundry, Oakland, Calif.

CHAIN—Coil or Binder
Campbell Chain Co., York, Pa.
S. G. Taylor Chain Co., Hammond, Ind.

CHAIN—Steel Roller and Malleable
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Link-Belt Co., Seattle, Portland, San Francisco

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Gage Steel Construction Co.

CONVEYORS—Portable
Mathews Conveyor Co., Portland, Seattle, San Francisco and San Carlos, Calif.

CONVEYORS—Steel
Archer Blower & Pipe Co., Portland, Ore.

CRANES—INDUSTRIAL
Western Machinery Corp., Portland, Ore.

CRANES AND SHOVELS
Bucyrus-Erie Co., Seattle, Portland, So. Milwaukee
Ederer Engineering Co., Seattle
General Excavator Co., Marion, O.; Seattle
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Caterpillar Tractor Co., Peoria, Seattle, Portland, San Francisco
Cummins Engine Co., Columbus, Ind.; Portland, Seattle
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Herbert Fryer, Carnation, Wash.
Peter Koch, Seattle, Wash.
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Archer Blower & Pipe Co., Portland, Seattle
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Rees Blow Pipe Mfg. Co., San Francisco

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Henry Disston & Sons, Seattle, Portland, San Francisco
R. Hoe & Co., New York, N. Y.; Seattle, Portland, San Francisco
Nicholson File Co., Providence, R. I.
Simonds Saw & Steel Co., Fitchburg, Mass.; Portland, Seattle, San Francisco.

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Five hundred sixty-eight million board feet of beetle infested spruce timber in 86 separate chances will be advertised for sale by the U. S. Forest Service this spring in western Montana and northern Idaho. The sales will be made to aid in the control of the spruce bark beetle epidemic. Most sales will run for one or two years with a few larger sales for longer periods. Varying amounts of green spruce and other species will be included. Principal access roads are being constructed by the government. Sale contracts will require prompt logging of infested spruce.

Local milling and logging facilities are inadequate in some areas to log and manufacture the volumes needed to meet beetle control objectives. In other areas logs may be purchased from established operators. Stumpage prices have been set to expedite logging.

The total of sale deposits, including stumpage and slash disposal, averages $3.40 per M board feet for infested spruce. The location, volumes and number of sales are listed below. Advertisement data or other information may be obtained by writing to the Forest Supervisor at the indicated locations.

Kootenai National Forest—34 sales—222 million board feet—Libby, Montana
Kaniksu National Forest—13 sales—62 million board feet—Sandpoint, Idaho
Flathead National Forest—18 sales—120 million board feet—Kalispell, Montana
Clearwater National Forest—2 sales—30 million board feet—Orofino, Idaho
Lolo National Forest—11 sales—60 million board feet—Missoula, Montana
St. Joe National Forest—4 sales—53 million board feet—St. Maries, Idaho
Coeur d'Alene National Forest—4 sales—21 million board feet—Coeur d'Alene, Idaho

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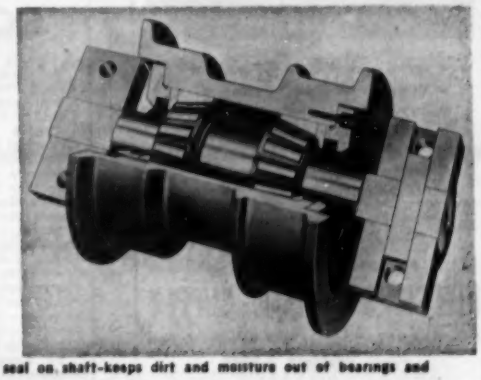

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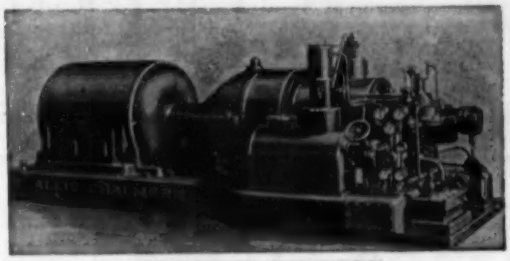

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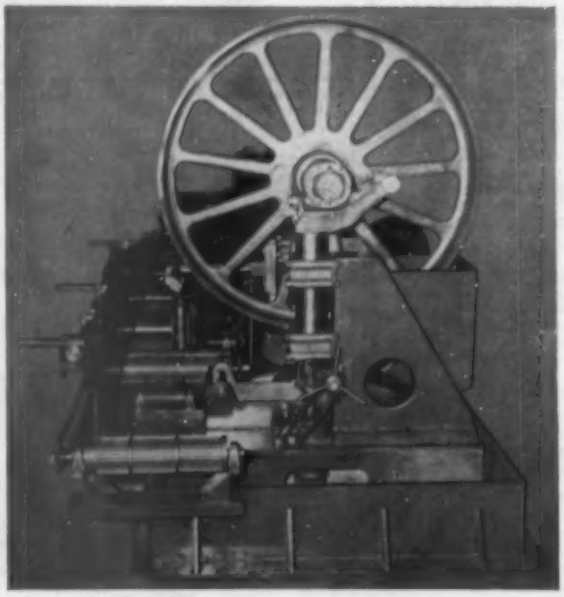

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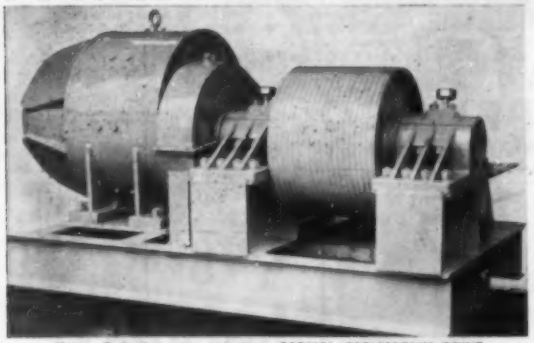

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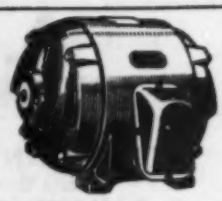

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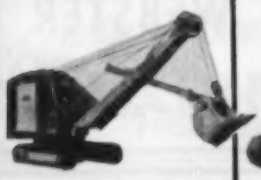

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2 Wood frame 18' 48" R&P 3-block, hand set.
1 Monarch 60" 3-block roller chain driven, Andrus set.
1 Sumner 60" 3-screw block, Trout set. Electric.
1 Pacific Coast type 48" 4-screw block, Trout set.
1 Pacific Coast type 48" 4-screw block, Trout set.

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1 G.E. Type I 50 HP 440V 900 RPM.
1 Westinghouse Type CW 50 HP 440V 1160 RPM.
1 Westinghouse Type CW 50 HP 220V 900 RPM.
1 Westinghouse Type CW 75 HP 440V 970 RPM.
1 Wagner Type 23WCB 60 HP 220V 1200 RPM.
1 G.E. Type MT 322 15 HP 440V 900 RPM.
1 A.C. 350 HP 440V 590 RPM.
1 G.E. Type I-15A 150 HP 440V 1120 RPM.
1 A.C. 75 HP 440V 590 RPM.
1 Stetson-Ross 15 HP 220/440V 870 RPM.
1 G.E. Type M 15 HP 440V 1200 RPM.
1 G.E. Type MT 322 20 HP 440V 1200 RPM.
1 G.E. Type MTC 5958 10 HP 440V 900 RPM.
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1 International Model UD9 - 45 HP, almost new.
1 Buda Model 6DT468 - 65 HP, new.
1 Buda Model 6DC844 - 180 HP, almost new.
1 G.M.C. Model 671 - 165 HP, reconditioned.
1 Waukesha Model 6WAK - 200 HP, reconditioned.
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1—6' Phoenix, Roller Bearing
1—Western Monarch 6', Roller Bearing, 11½" wheels, with 150 HP 720 RPM Slip Ring Motor, extra saw top wheel and arbor, V drive, several saws.

CARRIAGES

1—Peters 3 block, 48 inch opening, hydraulic set.

EDGERS

1—McDonough, 6 x 54 Eastern type, air locks on shifting levers, water-cooled bearings.

PLANERS - MOULDERS

1—Woods 404B, 15 x 6, 8 knife, with feed table, 75 HP motor
1—Woods 415M, 15 x 6, 10 knife, motorized, feed table, electrical controls
1—Woods 404B, 6 x 30, 8 knife, ripping attachment
1—Yates 91, 6 x 20, 8 knife
1—Woods 412, 15 x 6, ball bearing, belt drive, 10 knife, double profiles
1—Yates C55, 10" Electric Moulder
1—Yates CI-10" Moulder, 6 knife, with profiles

CARRIERS

1—Ross Series 91-7956, 52 x 67 package
1—Ross Series 90-7056, 52 x 58 package
1—Ross Series 90-6556, 52 x 54 package
1—Ross Series 90-6144, 42 x 48 package
2—Ross Model 12-6144, 42 x 48 package
2—Ross Model 11-6144, 42 x 48 package
1—Hyster Model M2-5766, 52 x 54 package
2—Hyster Model M2-4560, 42 x 48 package
1—Hyster Utility Model Model CP-4565, 42 x 53 package

LIFT TRUCKS

1—Ross Model 15SH, 15000 cap. 17'6" lift
1—Ross Model 16HT, 12000 cap. 17'6" lift
1—Hyster Model KT, 10000 cap. 14' lift

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1—8U 140 Skagit yarder with 140 HP Waukesha engine (3 drums) GK
1—Washington 11-18 RB stackline carriage

Used Motors — Gear Reducers

1—100 HP 1200 RPM 2—5 HP 68 Falk
1—100 HP 720 RPM 1—3 HP 68 Falk
1— 75 HP 900 RPM 1—2 HP 230 US
1— 30 HP 1200 RPM 1—1 HP 68 Falk
2— 30 HP 900 RPM 1—1 HP 78 Falk
1— 20 HP 1200 RPM
1— 15 HP 1200 RPM
1—7½ HP 900 RPM
1—7½ HP 720 RPM

Grinders

1—Covel #120 L Grinder, motorized with stand & clamp
1—99A5-36 Dependable knife grinder, new
1—42" segment grinder for shingle saws
2—12 x 14 x 5 leveling blocks

Boot Spikes

½ x 7 galv. ½ x 14 galv.
½ x 8 galv. ⅜ x 8 black
½ x 9 galv. ⅜ x 10 galv.

Sawmill Equipment

4—12 x 24 roll cases on 15" channel with miter gears
1—4 arm log stop & loader operated by 18 x 30 steam cylinder shaft 5-15/16" 39' long
4—60" rack & pinion head blocks complete
4—54" rack & pinion head blocks complete
1—8" & 10" x 5' full enc. hill nigger
54" 3-block screw carriage AC setworks
1—F & S head block 72"
1—5-saw Lamb G.H. gang bolter saw
1—#60 Diamond hog, babbitt bearing, steel rotor
1—12 x 7 x 12 F & M feed pump, outside center packed
1—6 x 42 Erie stub edger with 60 HP, G.E. S.B. motor
1—18 x 10 x 12 Gardner feed pump outside pack
1—Kelly Berryman pre water heater over 1000 HP
1—#4 Allis Trout set works
1—steam splitter saw 6" x 42" with 12' x 14" inserted tooth saw
400'—#124 Z metal (very good)
750'—#130 camel back (very good)

Roll Cases

4—12 x 24 x 2 -7/16" miter gear driven on steel frame
17—8 x 54 x 1 11/16" live pipe rolls, double 1" P cut sprockets, chain and boxes
15—8 x 30 live pipe rolls driven by 1" P roller chain
13—8 x 54 live pipe rolls, miter gear driven in oil tight boxes 2-3/16"

Woodworking Machinery

4—Calf. cut-off saws
1—Parker egg crate nailing machine
1—Stetson-Ross handy saw 5 HP 440 V.
1—#10 jointer 2 knife roundhead 24"
1—Davis & Wells single spindle shaper 20 x 30 table
1—Sinker Davis power rip saw

Engines

1—135 HP @1000 RPM Le Roi gas engine
1—235 HP Hesselman diesel air equipped with Skagit transmission

Kiln Equipment

1500' cat walk 12" wide 3/16" x 1¼" on edge spaced 1" apart
700 Kiln trucks 18" to 6'6" long 3" and 4" channel, 7" wheels

Steam Cylinders (with valves)

1—10 x 14 9—8 x 12 1— 6 x 12
1—10 x 12 1—8 x 10 1—18 x 24
1— 8 x 24 2—6 x 32 1—18 x 30
1— 8 x 16 1—6 x 16

Miscellaneous

1—Moxley flash boiler
1—Jarecki 2½" to 6" pipe machine
1—5 ton Hercules chain block
1—core gear & pinion
1—car hoist 12" x 72" cylinder
3—16" & 18" Sumner standard shingle machines 1908 with 25 HP ball bearing motor V belted to main arbor complete with saws, collars, starters, etc.
1—Acme double quick opening 2" bolt threader
1—1250 KW Allis turbine 2300 V, 3600 RPM with all accessories and surface condenser
1—1000 gal. underwriters cent. fire pump, turbine driven
1—I.R. twin horizontal 2 stabe compressor 550 CF
1—7' 6" O.D. cyclone
2000 ft. 3" black pipe
6000 ft. 1" black pipe, t & c
1—5 ton Wright Bridge crane, 47 ft. span, 440 volt
1—4 ton capacity lift truck (diesel)

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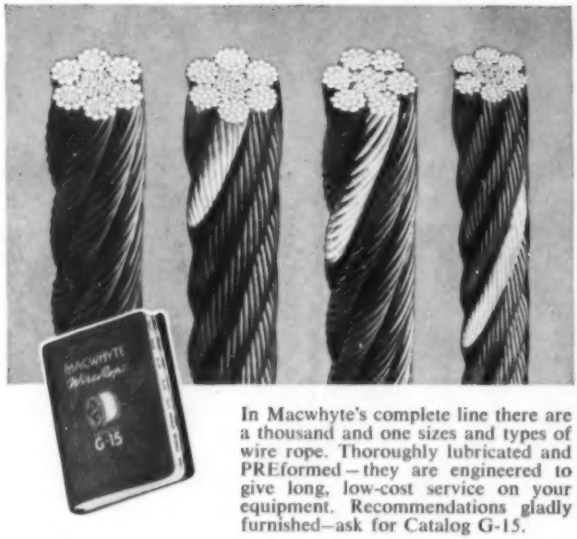

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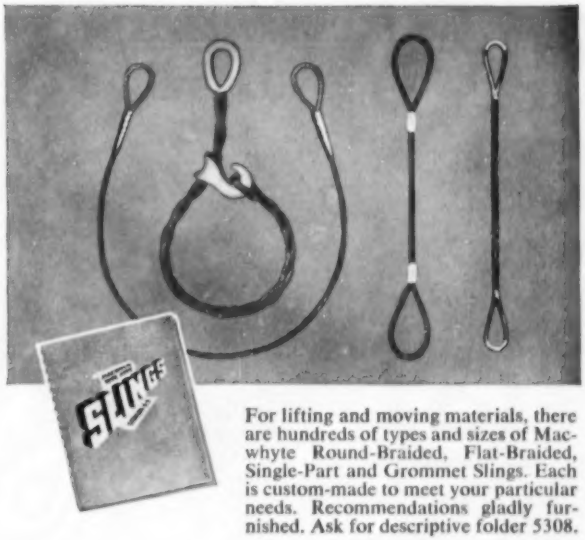

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